The Builder.

VOL. LXXVI. No. 2920. JANUARY 21, 1899.

ILLUSTRATIONS.

Palazzo Della Ragione, Vicenza (Palladio).....*Single-Page Tone-Block.*
Portico, Santa Maria dei Miracoli, Brescia .....*Single-Page Tone-Block.*
Technical Institute, Norwich.—Messrs. Arthur E. Collins and W. Douglas Wiles, Architects .....*Double-Page Ink-Photo.*
Vestry Offices, Ormskirk.—Messrs. Willink & Thicknesse, Architects .....*Single-Page Ink-Photo.*
Village Hall and Club, Byfleet.—Messrs. Ashley & Armstrong, Architects .....*Single-Page Ink-Photo.*
Design for a Golf Club-House (Architectural Association Silver Medal, 1897).—By Mr. H. Inigo Triggs .....*Single-Page Photo-Litho.*
New Club-House for the London Scottish Golf Club, Wimbledon Common.—Mr. H. O. Cresswell, F.R.I.B.A., Architect.....*Single-Page Photo-Litho.*

Blocks in Text.

Inscribed Stone in Fobbing Church, Essex ..... Page 59
Norwich Technical School: Plans ..... 66—67
Norwich Technical School: Sections 68
Byfleet Village Hall: Plan.....Page 69
Design for a Golf Club: Plan 69
Club House for the London Scottish Golf Club: Plan 69

CONTENTS.

Arbitration and Conciliation in Trade Disputes..... 55
The Students' Competition Drawings at the Institute 56
Notes 57
The Royal Institute of British Architects 60
Common Errors in Architectural Design 61
Architectural Association Discussion Section 64
Competitions 65
Artistic Decorations for the Paris Exhibition 65
Metropolitan Asylums Board..... 65
Palazzo Della Ragione, Vicenza 65
S. Maria Dei Miracoli, Brescia 67
City of Norwich Technical Institute 67
New Parish Offices, Ormskirk 68
Village Hall and Club, Byfleet 68
Design for a Golf Club House 68
London Scottish Golf Club House 68
Architectural Societies 69
The London Building Trade..... 69
Private Bills for the Coming Session; and Provisional Orders (Board of Trade, and Light Railways Commission) 70
The New Vauxhall Bridge 71
Premiated Design for a Town Church 71
The Bar-Gate, Southampton 71
Cleaning Old Brickwork 71
Books Received 71
The Student's Column—The Site.—III. 71
General Building News 72
Sanitary and Engineering News 73
Foreign 73
Miscellaneous 73
Capital and Labour 74
Legal 74
Meetings 75
Recent Patents 76
Some Recent Sales of Property 77
Tenders 77

Arbitration and Conciliation in Trade Disputes.

THERE can be no doubt that the engineers' and the coal miners' strikes have deeply affected the public mind and have left a strong impression on public opinion, which now views these ruinous trade wars with the utmost disquietude. Outsiders are said to notice most of a game, and the public standing watching these strikes sees that the result of a struggle impoverishing and nearly ruining many of the combatants might well have been obtained at much less cost, if each party had been willing to have had it settled by an impartial and competent arbitrator. Of this there can be no doubt, for after months of an industrial war little more is gained than would have been equally well obtained by a judicial decision. Hence has arisen a desire that some system of compulsory arbitration may be established under which trade disputes may be quickly ended and the judgment effectually enforced.

The existence of this sentiment in the public mind will probably have some useful results, which may tend to shorten industrial contests between capital and labour, but it is not in the least likely that the present state of public feeling will cause a system of compulsory arbitration to be established. It is just as well, however, that the ultras of the two often adverse parties, capitalists and artisans, should bear the state of the public mind in view; for, after all, one may fairly say, altering somewhat a well-known legal maxim, that *judicium populi suprema lex;* in other words, in these days, if the nation as a whole makes up its mind that these trade disputes must be stopped, some means may be found to attain this end, whether employers and employed like them or not.

It is, however, abundantly clear that compulsory arbitration is not possible. Those who have recently in the public press advocated such a system seem to forget that neither employers nor employed have ever expressed any desire for such a system. Indeed, in the recent and still continuing public discussion of this question the absence of employers and employed from the controversy is remarkable. The persons most interested in the matter have, it may be said, kept silent, and the argument has been maintained almost entirely by the pens of third persons.

It is obvious that the most admirable system of compulsory arbitration may be established—on paper. But if neither side will invoke it, it remains, like a well-known French constitution—on paper. In disputes between man and man in daily life, one party, at any rate, must, as the phrase is, go to law. If neither party is willing to do so, no judge can compel them. Again, in private legal disputes, nothing is better established than that there must be definite parties concerned, either individuals or bodies incorporated by law, which are practically groups of individuals in one entity; without such definite parties litigation is impossible for any practical purposes. And for the purposes of compulsory arbitration well-defined parties to a dispute are equally necessary. But at present this definiteness does not exist. Many employers may be affected by a strike in a particular trade, large numbers of workmen belonging to a particular union; but neither masters nor men are sufficiently incorporated in a definite and fixed organisation to make it possible to establish anything in the nature of obligatory arbitrations in trade disputes.

Parliament might, perhaps, establish a system of compulsory arbitration, and from time to time it might be used, but it would be so used because each party to a strike or a struggle was willing that the authority established to decide these quarrels should settle the dispute. In other words, the compulsory system would be used as a voluntary system; it would not be a bit more effectual by being compulsory; it would be just as useful if it were a voluntary system.

It has been said that the experience of the Compulsory Arbitration Act in New Zealand, which was passed in 1894, shows that a system of compulsory arbitration is possible and feasible. The working of that Act has recently been to some extent explained by Mr. Reeves, the Agent-General of New Zealand in London, by whom the Act was passed through the Colonial Legislature, and his explanation seems to show that at present no useful lesson in regard to this country can be learned from New Zealand. There is nothing at all in Mr. Reeves' explanation to show that the disputes which were settled under the Act would not have come before the Arbitration Court if the Act had not been compulsory. Mr. Reeves wrote, "Compulsion is not used in New Zealand until the resources of conciliation have been exhausted. The local Conciliation Board before which every case must first come . . . . have no power to enforce their awards. They make a recommendation only. Out of the first thirty-one cases under the Act in New Zealand, eight were finally dealt with by the Conciliation Boards in this way, while the remaining twenty-three went on appeal to the Central Court of Arbitration." Further on it is stated that, in the Court of Arbitration, "the parties are face to face with a Judge of the Supreme Court and two assessors—one elected by employers, the other by trade unions. This Court may, but is not obliged to, give its awards the force of law. What it has done on several occasions is to give a compulsory award on some points, attaching to it certain reasonable recommendations as to other points, which it suggests that both sides should accept. As far as I can find this plan, when used, has been employed with the happiest results." Under voluntary trade arbitrations in Great Britain, recommendations of arbitrators which could not be enforced have also been acted on with "the happiest results." It is obvious that the so-called compulsory system of arbitration comes to next to nothing, and that that system, if applied at all, can only be useful in very small disputes. "The penalties the Court may inflict on a breach of the award are, first, the payment of a fine not to exceed 500*l.* in the case of a union or an individual employer." Imagine a fine of 500*l.* in the case of a struggle, say between the London and North-Western Railway and its workmen! Next, the Court has "the ordinary power of proceeding by committal or attachment of any one who defies it." Burke, in a celebrated saying, declared that you could not draw an indictment against a whole nation. Imagine, again, committing the Engineers' Union or the Board of the North-Western Railway to prison because they, having paid a fine of 500*l.*, would still not carry out an award. The whole thing, when it is carefully analysed, is little better than child's play.

Nevertheless, it is desirable to consider the so-called system, otherwise it may be said that theoretrical objections to a system of compulsory arbitration are valueless when there is experience in its favour to be gathered from the colonies. The experience, in our opinion, is all the other way.

Those also who advocate a system of compulsory arbitration forget two characteristics of the modern commercial world—its dislike of litigation and its nervousness. Men of business object, more than any other members of the community, to go into a court of law to have their affairs settled by irresponsible persons, and no class of men are more fearful—and rightly—of compulsory changes in methods of business. In a word, a system of compulsory arbitration would be contrary to the tendencies of modern business. What is needed is not compulsory arbitration, but easy means of enabling parties to trade disputes to have them settled voluntarily by an arbitrator or a conciliator, and that trade opinion should recognise that this is the best way of attaining a result when there is a difference of opinion between employers and employed.

In some respects those who have in the recent discussion so warmly advocated a system of compulsory arbitration have been forgetful of the large number of labour disputes which are settled every year in Great Britain by arbitration. The two great strikes—the engineers' and the coal miners'—have so impressed the public mind that the country generally is a little too much inclined to overlook the fact that both employers and employed now constantly have labour disputes settled by arbitration. Those who are familiar with the annual returns of the Board of Trade are well aware that the very adverse attitude taken up towards each other by masters and men in some of the large strikes does not characterise all disputes. We have on former occasions referred to these returns in detail. We have no intention of doing so again now; it is, however, well to bear in mind that voluntary arbitration and conciliation are to-day active and useful elements in trade disputes, and that they play an important part in trade differences.

When we come to consider the increase of facilities for voluntary arbitration we touch on thoroughly sound ground and get near some practical remedies. In this respect the proposals of the London Conciliation Board deserve consideration. From some information which has recently been published it appears that this body is anxious for further legislation on some definite lines. One of these is the creation of local Arbitration Boards of employers and employed, rather than direct intervention by the Board of Trade. On the whole, this would be legislation in the right direction. The intervention of a Government department is to be deprecated. Even with the fairest intentions, it will not be regarded with confidence by all classes, because in this country the head of it is a party politician, who also in many instances is not a man of business. A fussy personage at the head of the Board of Trade may bring the whole system of conciliation into ridicule. What is needed is that there should be in every district a body with a knowledge of trade, ready to be invoked at the beginning of a dispute; though no sane man will suppose that even the most competent body, fully trusted by masters and men, will in every case be able to stop a trade war.

The second main point of the policy of the Board of Conciliation is that each party shall voluntarily deposit a sum of money with the Board, which shall be forfeited if the award is disobeyed. We confess that this practice does not seem to have the value which the Board appear to attach to it. In a large strike the sum or security must be vast to be effectual. In a small dispute, however, such a stipulation may be of use. But it is not the minor trade disputes—a contest, for example, between a local builder and his plasterers—with which the public is concerned or in which public interest is aroused. It is the great strikes, those which indirectly affect many trades besides that in which the dispute has arisen, which inconvenience the public and are of national importance. With the best possible system of voluntary arbitration these, we can scarcely doubt, must from time to time occur. The interests involved are so great that neither side is willing to submit its differences to impartial judgment. The end of these contests will not be yet. We have not reached that ideal age which exists in the poetical imagination, when

> "The common sense of most shall hold a fretful realm in awe,
> And the kindly earth shall slumber, lapt in universal law."

We have, however, undoubtedly come to a time when public opinion views strikes with the greatest uneasiness, and when, fortunately, many disputes between capital and labour are adjusted by voluntary arbitration. The influence of public opinion and the giving of further practical facilities for the adjusting of trade disputes at their beginning, and before an irreconcilable stand has been taken by either side, are the means to which we must look for the prevention of strikes—some of which must, however, occur from time to time.

THE STUDENTS' COMPETITION DRAWINGS AT THE INSTITUTE

THE drawings sent in for the various prizes offered by the Institute, and now on view at 9, Conduit-street, form a very interesting collection, and two of the sets, those sent in for the Pugin Studentship and those for the silver medal and ten guineas for measured drawings, are of unusual excellence. We are informed also that the essays submitted for the essay prize, which has been awarded to Mr. Hubert C. Corlette, are of unusual excellence, and no less than seven have been submitted; and considering what a very poor response has been made for this prize in several recent years, it is gratifying to find that it is attracting more attention. The subject for this year, "The Use and Value of Colour in Architecture," was no doubt an unusually attractive one.

The most important of all the prizes to be contended for is however the Soane medallion, because that is the only one in which young architects are invited to make an original design for a building for a given purpose, without any restriction as to architectural style. In this instance we must regret to feel that the result is not satisfactory. The subject given was "A Concert-Room," a subject which was also given last year, when the plans sent in were considered so poor that the prize was withheld. In this year's competition there is a decided improvement, but still the plans in general do not convey the impression that the competitors have really endeavoured to understand the practical problem of planning a concert-room; and the award made by the Council is to us almost incomprehensible. In the set of drawings, "Ben Marcato," to which the prize has been awarded, the arrangement of the orchestra has almost every fault it could have. The seats for the chorus are in straight lines across the orchestra, so that the singers (those at the sides at least) would neither face the conductor nor hear each other; the band is provided for on an inadequate strip of flat floor at the foot of the chorus seats, so that they would all be on the same level (an arrangement which seems to show that the author has never even looked at a band in position); there is no place for the conductor; and the organ is divided in two recesses, on each side of the orchestra, in which it is so buried that its sound would be nearly lost, and which have not half the height necessary for a large organ. The whole of this important part of a concert-room is absolutely wrong on the plan. On the flanks of the building is a large order of Corinthian columns which appear on the two upper plans, but which, as appears from the ground plan, rest on the roof of the corridor round the concert-room area. Is it supposed that the Institute wish to encourage this kind of sham designing? The cloakrooms in connexion with the main entrance are very badly placed, opening straight in view of the grand staircase, and the ladies' and gentlemen's cloakroom doors close to each other; for a student's design this is a minor matter, perhaps, but attention has frequently been called to it in the public criticism of designs. The one thing that can be said for the selection is that the perspective view is the best in the sense of architectural effect, and shows a grandiose and well-balanced block of building, although part of its effect results from those aforesaid flanking columns which stand on the roof of the corridor. But surely a prize like the Soane is not intended only to encourage the study of architectural effect; it is intended (or ought to be) to induce students to study the whole requirements of the kind of building asked for. If this is not so, the Council might as well announce in the future that the Soane medallion will be awarded for the best perspective drawing of an imaginary building, and leave the plans and sections out of consideration. We are quite sure that the architectural school of the Ecole des Beaux-Arts would not have awarded an important prize for a design with so many practical defects.

It is rather a question whether the Soane ought not again to have been withheld, but if it were given, it should, we think, have been awarded to "Olive Green." The orchestra here is properly planned, the only mistake being that the steps for the band ought to be wider than the chorus seats; this competitor is the only one who knows what the size of a concert-hall organ ought to be—he has secured the necessary thirty-two feet in height and has given it ten feet projection; and as there are cross walls abutting on the rear of the main wall, it would be possible in this case to carry the organ bracketted out as shown. The design of the exterior, though not what the French call "monumental," is clever and has a good deal of character, and on the whole we con-

sider this the best set. It was a mistake to plan the end of the concert-room on a segmental curve—such a curve is likely to focus an echo on its centre; it is more easy to avoid a return echo with an end wall on a straight plan, but broken up with pilasters or some other architectural device. Unbroken surfaces of wall, whether at the sides or end, are bad, and likely to produce disturbing echoes; the author of "Si je puis" seems to be aware of this, and has broken up his wall surfaces with pilasters; most of the competitors have not done so.

We do not know whether the instructions for the competition were to design a hall which might be used for other purposes than concerts; but if not, we may observe that a flat floor is bad; the floor should be slightly raised from front to back. No competitor seems to have thought of this. Among the other sets, "Cæcilia" shows everything on square lines, and the same mistake of a flat floor for the band as in "Ben Marcato"; no organ is shown. The design is a rather pretty one in free classic style of the taste of the Adam period. "Honor" makes a tremendous display of octagonal *foyer* and accessories, which would be effective, but are not conveniently planned. The auditorium is nearly a circle, a form which may be made to answer by judicious treatment of detail, but is not in the main a good one for a large music-room; it is very difficult to kill echo in a plan of that shape. The organ is only allowed 5 ft. projection, which is quite inadequate; but none of the competitors except "Olive Green" seem to have any idea of the real size of a modern concert organ; they could easily have got one; it is only writing and asking an organ-builder. The perspective of this design shows a considerable amount of spirit and effect. "Swan" shows also a circular plan; the orchestra is absurd, but there is a certain merit and originality in the exterior design. "Lion Rampant" shows a wide room with rounded corners, an ugly shape without any particular practical advantage; the divergent walls of the orchestra are a good point; there is a good deal of cleverness of idea in the perspective sketch, though it is not all quite *in* perspective. In "Si je puis" the orchestra is laid out for a chorus only, the band seems to be forgotten; the cloakrooms in this plan are better arranged than in most. The exterior, with an order of coupled columns in front, has merit, but the flank elevation with its row of single columns on high pedestals is very monotonous. "Lohengrin" seems really to have philosophised as to the requirements of a concert-room, and thinks that a room with sides spreading fan-wise from the orchestra is good; its advantage, however, would really be in seeing rather than in hearing, and it would be difficult to make such a room architecturally bearable. The exterior design is eccentric enough, but there is an idea in it; and if the author is a rather young student (as we should imagine), the attempt to work out a treatment of his own is creditable to him. "Civitali" shows a circular auditorium with a disproportionately small rectangular recess for the orchestra; his exterior perspective, though roughly executed, shows some eye for architectural character.

The Tite design is for "a Royal Mausoleum," a beautiful subject, and the competition is a good one. We quite concur in the award of the prize to "Red Rose"; his exterior perspective is not very happy in style, and the building as a whole is too high for its base (for this style of composition); but the simple circular plan, with its large internal piers, is dignified and suitable, and the interior perspective is an excellent bit of design and drawing. The Medal of Merit has been given to "Petronius," a design on a much more complicated plan, and the architectural treatment is too complicated also, too much broken up; it wants the solid grandeur proper to a mausoleum. We should have awarded the Medal of Merit to "Memoria," a more original and more monumental design, with its mass of rusticated masonry and the symbolical obelisks over the entrance façade; there is more of an idea in this design, which has however only received an Honourable Mention. "Imperial" is a very slight design, but the exterior perspective has some good points. "En Avant," an octagonal plan with arms on four sides and semi-circular bays on the other four, is a pretty design, and makes some effect with an immense double flight of external steps; but the whole has a rather too *pavillon chinois* effect. "Rex" is a clever design, a square mass with a pilaster story and a panelled story, and a low circular dome above with a wall colonnade, but it wants dignity; the detail drawing is good, however, as well as the sketch of the interior monument.

Of the drawings for the Owen Jones Scholarship, those by Mr. J. Stewart, to whom it has been awarded, are manifestly superior to all the others, and are an exceptionally fine set. The most important of them are drawings of coloured ceiling designs from Pistoia, Verona and elsewhere. Mr. Wigram has submitted chiefly coloured sketches, views of buildings, which are not exactly what the Scholarship was intended to promote; he has, however, some careful drawings of mosaics. Mr. V. J. Cummings has made some careful and powerfully executed drawings of stained glass and of some painted screens from Norfolk churches, as well as other subjects.

The drawings for which Mr. Rutherford has been awarded the Pugin Studentship are a very fine set, remarkable for their variety of subject and of style of execution. Possibly the large drawing from the porch of Chartres by Mr. Bennett, who has gained the Medal of Merit, is superior to any single one of Mr. Rutherford's, but the drawings of the latter are superior as a collection. Mr. Ramsay Traquair gains another Medal of Merit, and Mr. Herbert an Honourable Mention for a set including a great many very good small pencil sketches. Amongst the other drawings Mr. G. S. Nicol's large tinted elevation of the Hôtel Valois at Caen is worth notice; and Mr. C. B. Pearson, of Lancaster, has executed a careful though rather mechanical drawing of the oak stall work in Lancaster Church, as well as a very good set of small sketches of various subjects.

The drawings for the Silver Medal and ten guineas are also, as already observed, a very good collection; the medal has been awarded to Mr. H. E. Kirby for the set signed "Wren," consisting of drawings of the north porch of St. Paul's, very beautifully and carefully executed. The subject has been done before for this competition, and the drawings are therefore of less practical value than those of subjects that are new. We are not sure whether Mr. Heaton Comyn, with his careful and complete drawings of St. Catherine's College, had not an equal claim; he has received a Medal of Merit and five guineas, a similar prize being awarded to Mr. E. F. Knight for his careful and delicate set of Southwold Church. Among the other sets "Sulphur" shows an interesting set of drawings of Riddlesden Hall, Keighley, with its curious gallery with a square open loggia at each end. "Nomen" submits a good set of drawings of Moreton Old Hall; it is a curious point in the plan, the way in which the dining-room bay has been distorted in plan to avoid coming too close up to the similar drawing-room bay in the angle of the courtyard — an evident sign that the building was not set out very carefully on the ground. "Pitti" submits drawings of St. Michael's Church, Linlithgow, a curious mixture of Scottish and French characteristics in Gothic — corbie-step gables and flamboyant tracery windows; a heavy-looking building, but worth illustration.

The Grissell Medal has attracted fewer competitors than most of the other prizes, construction being generally less attractive than design. The prize drawings, by Mr. Gardner Wallace, show careful working out of iron construction.

On the whole, the exhibition shows much excellent and painstaking work, and is highly creditable to the ability and industry of the young architects who have furnished it.

NOTES.

The London Water Supply Question.

IF we may judge by the reports in the daily papers, some of the evidence given before Lord Llandaff's Commission on the Water Supply of London was of a somewhat biassed character. In an inquiry of such vast importance as this—affecting as it does a population equal to that of the whole of Ireland, and so crowded together that an epidemic of serious disease could not fail to be appalling in its results—we have a right to expect that the whole truth should be plainly and clearly stated. Sir William Crookes' statements that, "at times, when the water was low in the river, it was found that the microbes in the filtered water increased," and that "all his experience showed that there were fewer microbes in the filtered water when the water was taken in time of flood," although perhaps true in a sense, are, in our opinion, misleading. Even under cross-examination by Mr. Mellor he does not appear to have thought it necessary to have told the whole truth, and it was left to Professor Dewar to explain that the purer nature of the filtered flood-water was "probably"—note the implied doubt even here—due to the diminished rate of filtration which "necessarily" occurred when dirty flood-water was turned on to the filters. Every one knows that the rate of filtration has a most important bearing on the purity of the effluent water, and it would be more to the point if we were told the bacteriological character of the effluents obtained from flood-water and normal water *with the same rate of filtration*. It was acknowledged that there were more microbes in the river water when in flood than when not in flood, and this, of course, means that enormous quantities must have been carried into the river in flood-time by the surface-washing from cultivated lands, and he would be a bold man who dared act up to the opinion that

these additional microbes are always as harmless as Sir William Crookes would have us believe. "The whole question of microbes," he said, "is sentimental rather than practical, and for my own part I would have no objection to drinking Thames water unfiltered." We venture to think that a twelve-months' course of this article of diet would alter his opinion.

The Manchester Sewage Problem.

THANKS to the persistence of the Mersey and Irwell Joint Committee, the solution of the Manchester sewage problem seems now within measurable distance. After the ratepayers' rejection of the culvert scheme, three experts were appointed by the Corporation to consider the most likely methods of sewage disposal or purification, and to report thereon. Two of the three Commissioners were biologists, namely, Dr. Percy Frankland, of the Mason University, Birmingham, and Dr. Perkin, Professor of Organic Chemistry at Owens College, Manchester; Mr. Baldwin Latham, the well-known engineer, completed the trio. At a Local Government Board inquiry at the end of last week, these experts gave evidence, and were unanimous in recommending a system of bacteriolysis by means of two or three series of "contact-beds" or filters, composed of cinders of uniform size. It is estimated that fifty acres of these bacteria-beds will be required for the treatment of 25,000,000 gallons of sewage; no chemicals whatever will be employed, but the sewage, before being passed on to the filters, will be led through straining-pits and tanks, in order that the larger and heavier particles may be removed by straining and sedimentation. These tanks are the existing open tanks, and must not be confused with the covered tanks adopted in the septic system, against which the Commissioners urge the "enormous" cost and the opinion that they are "liable to miss fire in certain contingencies—as, for example, when there is a rush of storm-water." The inquiry has been adjourned for three months in order that the Commissioners may conclude their researches, and the complete plans of the purification works be prepared. The experience of Manchester will be of great service to smaller authorities throughout the country, and will doubtless conduce to that general purification of sewage, the result of which will be that our rivers will be truly rivers once more and not public sewers.

Land for Urban Improvement.

THE recent case of Donaldson *v.* The Corporation of South Shields has settled an interesting and important point in regard to the taking of land for public improvements. The long and short of the decision was that the Corporation, who had obtained Parliamentary powers to widen certain streets, had no right to take land which was not required for the actual purposes of the work, but which if they took they could sell at a profit; in other words, to use the expression of the Master of the Rolls, the Corporation could not take land for financial purposes which was not required for engineering purposes. The land was partly outside the limits of deviation, and, as it seems to us, if the contention of the Corporation had been held good, there would really be no limit to the extent of land which might be taken. No doubt it is very desirable that any true surplus lands should be sold at a profit, but merely to take land in order to resell so as to lessen the cost of improvements would be a new and dangerous departure.

Working Men's College at Oxford.

Two American gentlemen propose to establish at Oxford a Working Men's College, to be called the Ruskin Hall. A meeting of the Oxford Trades and Labour Council in regard to it was held last week. At present the objects and system seen rather nebulous. Mr. Beard, one of the founders, stated that he wished to give men who had not money an opportunity of taking the regular University course, but they were not going to teach any "isms." We take it that the long and the short of it is that there will be courses of lectures by University teachers for those who cannot afford to become members of the University. In other words, the system which is known as the "University Extension system" will have a kind of local offshoot in Oxford. It is difficult to see, however, why this institution should be called a working man's college. At present we are somewhat in doubt as to its utility, and as the two founders are members of the University of Oxford, we are afraid that there is rather too much youthful enthusiasm about it. It does not seem a particularly practical scheme; it is not for the purpose of technical education, nor apparently is it for poor youths who are unable to go through a University course.

Municipal Theatre, Berlin.

THERE is a scheme at Berlin for a Municipal Theatre. The promoter, who is not an architect (though we presume the plans must have been drawn by an architect) lays stress on the importance of the approaches of the modern playhouse, as far as cab ranks, &c., are concerned, and extensive covered approaches are provided for putting down and taking up; special arrangements also being made for a kind of covered tramway terminus, so that members of the audience arriving by the humbler conveyances are also properly cared for. Next, the cloak-room facilities have had the promoter's special attention, and we find elaborate arrangements for decentralising this department in such a manner that practically every seat has its own cloak-room peg, and any crowding is thus avoided. This point is perhaps of more importance abroad, as it is customary to leave all wraps outside the auditorium proper. Again, the staircase arrangements and the general exits are exceedingly clear; the idea of giving a door to every two rows of seats throughout the stalls and pit being most satisfactory. The scheme being that of a layman, it would be out of place to comment on some of the technical errors or on some of the features that are not practical; but, taken altogether, there is much of interest in the plans that have just been published, and they merit our attention at a time when the question of a Municipal Opera House for London is under consideration.

The Progress of Electricity.

IN the discussion on the "Progress of Electricity" at the monthly dinner of the London Chamber of Commerce, on Tuesday night, several interesting topics were raised. Mr. T. F. Blackwell, the Chairman, in referring to the proposal of an all-British cable to Australia, said that it was easy to imagine circumstances in which it would be of vital importance to the Government to have full and entire control of such a cable. We are glad that the question of the Pacific cable has again been raised, as it is not only a feasible undertaking, but, judging from the Eastern Extension Telegraph Company's profits, likely to be a profitable one. It is now a year and a half since the Government indicated that it was willing to co-operate with Canada and the Australian Colonies interested, but, so far, no initiative has been taken in the matter. The Chairman also hoped that the time would soon come when the Government would take over the telephone service. This hope seemed to meet the general approval of the majority of those present, but it drew a spirited protest from General Webber. The telephone industry was, in General Webber's opinion, purely a local one. The difficulties which the Post Office would have to overcome if it took over the service were purely local. He also said that in all those countries where there was a national telephone service the progress had not been so great as in those countries where the service had been managed locally. In our opinion, however, these disadvantages do not outweigh the numerous advantages that would accrue from nationalising the telephone. Mr. Garcke stated that this country was even to-day several years behind almost every other civilised country in electrical matters. This backward state was due, he thought, to the tendency towards municipalisation. Whether he is correct in his surmise or not, there can be no doubt that in electric lighting and traction we are still making very slow progress when compared with our neighbours.

Sewage Flooding in Southwark.

AT a meeting of the St. George's Vestry last week the Medical Officer of Health (Dr. F. T. Waldo) presented a Report of a most serious state of things in parts of Southwark, where cellars were recently visited by him, in use as workrooms by bakers, cooks, butchers, as well as other trades, which had been flooded by drain overflows consisting of storm-water mingled with sewage. In a Report furnished by him to the London County Council in 1893, he had furnished particulars of twenty cellars in which he had found evidence of sewage flooding, and explained that "the special danger connected with this form of basement flooding is that this sewage is always more or less charged with the specific poison of typhoid fever, and is at any time liable to that of cholera and of other deadly diseases. It is obvious that such contaminated cellars are unfitted for the preparation of bread or other articles of food, and almost equally so for use as workshops or dwelling rooms." The London County Council suggested that it would be less costly to fill up the cellars than to enlarge the main sewer; a proposal which one can hardly suppose to have been made seriously, for even then there would be the question of sewage-charged subsoil to be met. A proposal that the Council should lay down a separate system of storm-water drainage for this district received no reply. It is evident that something ought to be done, and that the condition of some of the low-lying districts of London in the case of a heavy rainfall

causing an overflow from the sewer is a very serious sanitary evil.

"Dead Ends" in Water Mains.

IN Dr. Orme Dudfield's monthly Report on the sanitary state of the Kensington District, attention is drawn to a case in which the Public Analyst reported unfavourably on a sample of water taken from a house in St. James's-square, which he described as "polluted, and totally unfit for public supply and drinking purposes." The Grand Junction Company took exception to the position from which the water was drawn, as not likely to afford a fair sample of the water they supplied, and it appeared that the sample was drawn from a main terminating in a "dead end," and therefore sluggish in flow and likely to favour the growth of organisms. Dr. Dudfield observes in regard to this:—"There can, I think, be no reasonable doubt that danger ot the public health is involved in circumstances which tend to slow the flow of water, whether by actual dead-ends of mains or (as in the St. James's-square case) under conditions analogous. The Engineer stated that the Company were, and for some time past had been, engaged in abolishing dead-ends; it is to be hoped that the recent stir will have the desired effect of stimulating their activity in this direction. Quite recently Sir Edward Frankland has had occasion to direct attention to the ill effects of dead ends of mains, in a report on the water supply at Paisley, where an epidemic of enteric fever was probably due to a gross defect in the apparatus for flushing dead ends."

Percolation through Brick and Stone.

THE results of some experiments to ascertain the most effective material for checking the percolation of water through brick or stone work are given by Mr. A. W. Hale in a recent number of the *Engineering and Mining Journal*. The investigation was mainly carried out in connexion with the new Croton aqueduct of New York, and the substances employed in the experiments were numerous and varied. It was found that Portland cement gave the best results, and that the hydrocarbons, which are commonly regarded as suitable materials for rendering brick or stone impervious to water, oxidised by exposure to air and gradually disappeared. It was also found that a brick was rendered impervious to water by cement more rapidly when the cement was applied as a wash by means of a brush than when applied with a trowel in the usual manner. A brick which had been treated with four cement washes was found at the expiration of two months to be quite impervious to water, even under a pressure of 200 lbs. per square inch.

St. Lawrence, Reading.

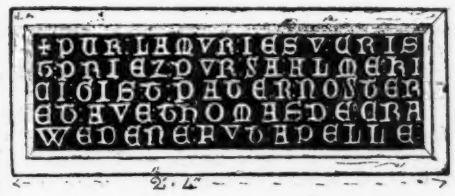
THE tale of damage wrought by the recent gale at Reading includes the destruction of a pinnacle of a turret of the church's western tower, which was blown down on to the roof, whence it fell into the street. The records of the church, beginning from the first decade of the fifteenth century, rank amongst the oldest and most interesting in England. The first church was pulled down to make way for the Benedictine abbey founded by Henry I. It was rebuilt, just beyond the precincts, in or about 1196, by Abbot Hugh, who assigned it to the newly-founded hospitium of St. John the Baptist. Hugh's work comprises the arcade between the church and the north chapel (St. John's), the south door, and the east gable with its triple lancets; some fragments of walling, capitals, and so on, were found during a restoration of the tower about twenty years ago. The great west tower and the north arcade were erected in 1458-9; sixty years later new windows were inserted in the chancel and elsewhere, and the arches of the arcade were stilted by raising the columns. In the course of subsequent alterations, some of them carried out by Billing, were destroyed the south transept, built in 1637 by Sir Francis Knollys "for the peculiar use of himself and his posteritie as well for their seates there as for their burial place underneath," together with a cloister (see the aqua-tint in C. Coates's book, 1802) therefrom to the tower, built in 1619 with the bequest of John Blagrave, the mathematician, whose quaint monument (1611), however, is preserved. Other interesting features were wantonly obliterated, amongst them being the chancel aumbries, sedilia, and piscina, the rood-loft stairs, and some beautifully-executed paintings of the Transfiguration (1528) and the Annunciation, discovered above the lancet window and behind the wooden reredos respectively. During the repairs of 1867-8 the panelled and painted ceiling of the nave's east bay, and the dormer windows were removed. In the octagonal panelled font, carved in 1522 by Cheyney, the mason, who came from Wolsey's works at Hampton Court for the purpose, was baptised Archbishop Laud, who was born in a house that stood on the north side of Broad-street—where is now Lawd-place. The church books contain many entries relating to the "Lawd" family, the sale of the altars in 1549, the relics, and the clock in respect whereof 4d. was paid in 1498 for the "settyng of Jak, with the hangyng of his bell and mendyng his hond," and the various customs and pastimes of old-world parochial life.

The Verestchagin Exhibition.

THE principal works by M. Verestchagin, at the Grafton Gallery, are a series illustrating Napoleon's Russian campaign. The titles of the pictures in the catalogue are accompanied by long sensational stories of the campaign, for most of the statements in which no authority is quoted. The choice of the subject seems to have been influenced by the fact that M. Verestchagin has a facility for representing effects of snow, and in the Moscow campaign he could introduce snow *ad lib*. Whatever other interest these works possess must be considered as literary rather than artistic. Their general object seems to be to express and give vent to a kind of race-hatred on the part of the Russian artist against the memory of Napoleon, and to gloat over the pourtrayal of the worst miseries of the "retreat." This may be human nature, but it is not art. In No. 12, "On the Great Road," there is a keen effect of snow under a clear air and bright sun which is striking, and there is the tragic element of the snow-covered corpses at the side of the road, with here and there a bare foot or hand protruding; a kind of crude realism which is cheap enough and easily executed. In the main these pictures represent a coarse sensational style of painting, which hardly deserves the name of art in the higher sense. We are told that the representation of Napoléon's costume on the march is correct and previous paintings are not correct—that he wore a long sable mantle and a fur cap with ear-lappets, which is likely enough (though the authority is not given); but this kind of detail does not suffice to give reality to a picture. There is more impression of reality in Meissonier's well-known picture of the retreat, in spite of costume questions, than in any of these sensational representations.

Inscribed Stone in Fobbing Church.

THE accompanying cut is a reduced copy of the illustration given in the *Essex Review*, and referred to under the head of "Magazines and Reviews" in our last issue, of the inscribed stone built into the wall of Fobbing



Inscribed Stone in Fobbing Church, Essex.

Church, Essex. The writer of the notice o it, Mr. Miller Christy, gives the following translation of the inscription:—

"For the love of Jesus Christ, say for the soul of him who lies here a Paternoster and an Ave. Thomas de Crawdene he was called."

One may notice the curious phonetic spelling, "Kici gist," for "qu'ici gît," not of course unusual in mediæval inscriptions. The writer observes that the inscription is of earlier date than the architecture of the church as it at present stands. For further particulars we refer the reader to the *Essex Review* (January).

Exhibitions in Paris.

AT the Ecole des Beaux-Arts an interesting exhibition has been organised of the works of the late painter, Eugéne Boudin, who died a few months ago. The five hundred paintings, pastels, water-colours, and drawings collected display in a remarkable manner the strong individuality of the artist, whose work was entirely his own in style and feeling. The son of a Honfleur fisherman, and following at first the same occupation himself, Boudin passed his life by the sea, and was never tired of endeavouring to record on canvas its effects and the character of the shipping craft which were familiar to him. He sometimes made an excursion into the regions of the fashionable watering place and its crowd of bathers, as in the work entitled "l'Inauguration du Casino de Deauville," which recalls the costumes of the society of a past generation. He appears, however, to have acquired such a sympathy with the grey skies of Normandy that he could not paint Southern effects of atmosphere, and on the Mediterranean his tone is as grey as on the Channel. The seventh annual exhition of "Femmes Peintres et Sculpteurs," at the Georges Petit Gallery, is a great improvement on its predecessors, and is of considerable interest. Among the best works are a fine portrait of M. César Franck, by Mdlle. Jeanne Rongier, landscapes in pastel by Mdlle. Heléne Maréchale, and flower paintings by Mdlles. Aurélie and Marie Dampt, and Mdlle. Madeleine Carpentier. Among the sculpture subjects the "Flutiste," by Mdlle. Charlotte Monginot, deserves special mention.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

THE Fifth General Meeting (Business and Ordinary) of the Royal Institute of British Architects was held on Monday evening at No. 9, Conduit-street, Regent-street. Mr. E. A. Gruning, Vice-President, occupied the chair.

PRIZES AND STUDENTSHIPS.

The following gentlemen having been elected: As *Fellows*—Messrs. G. Hornblower (London), and H. Hoyne Fox (London); as *Associate*—Mr. J. A. Jones, jun. (London); the Deed of Award of prizes and studentships for 1899 was read by the Chairman.

The sealed envelopes bearing the respective mottoes or devices of the successful competitors were then opened. The following is the full list of prize-winners:—

THE ROYAL INSTITUTE SILVER MEDAL (Essays).—*Spectrum.*—Hubert C. Corlette (Silver Medal and Twenty-five Guineas).

"*C'est une fée qui prodigue le bien ou le mal.*"—Frederick Charles Eden (Prize of Books value £5).

"*Aucassin.*"—Arthur Troyte Griffith, B.A. Oxon (Certificate of Honourable Mention).

Gloire de Dijon.—J. Humphreys Jones, B.A. London (Certificate of Honourable Mention).

Non quo sed quo modo.—Alexander N. Paterson, M.A. (Certificate of Honourable Mention).

THE ROYAL INSTITUTE SILVER MEDAL (Measured Drawings. St. Paul's Cathedral). —*Wren.*—Henry Ernest Kirby (Silver Medal and Ten Guineas).

"*Non vi sed sæpe.*"—Heaton Comyn (Medal of Merit and Five Guineas).

"*Nox.*"—Edward F. Knight (Medal of Merit and Five Guineas).

THE SOANE MEDALLION.—(Design for a Concert Hall).—*Ben Marcato.*—William Arthur Mellon (Medallion and, under conditions of Continental Travel, 100*l.*).

THE TITE PRIZE.—(Design for a Royal Mausoleum).—*Red Rose.*—James B. Fulton (Certificate and, under conditions of Travel in Italy, 30*l.*).

Petronius.—Alex. McInnes Gardner (Medal of Merit and Five Guineas).

Memoria.—Ernest T. Jago (Certificate of Honourable Mention).

THE GRISSELL MEDAL.—"*Simplex*" (Design for Fruit, Flower, and Vegetable Market).—G. Gardner Wallace (Gold Medal and Ten Guineas).

"*Jack.*"—Charles A. Daubney (Certificate of Honourable Mention).

The Pugin Studentship and 40l.—Eleven applications were received for the Pugin Studentship from the following gentlemen:—1. R. C. Austin (London). 2. E. H. Bennett (London). 3. Benjamin Bower (Birmingham). 4. Ernest H. Evans (London). 5. Albert Herbert (Leicester). 6. G. Salway Nicol (Birmingham). 7. Charles B. Pearson (Lancaster). 8. H. Raine (London). 9. J. Hervey Rutherford (London). 10. Ramsay Traquair (Edinburgh). 11. J. A. Woore (Derby).

The Council have awarded the Medal and (subject to the condition, among others, that the said candidate devote a tour of not less than eight weeks' duration in some part of the United Kingdom to the study of Mediæval Architecture) the sum of 40*l.* to Mr. J. Hervey Rutherford, a Medal of Merit and Ten Guineas to Mr. E. H. Bennett, a Medal of Merit and Five Guineas to Mr. Ramsay Traquair, and a Certificate of Honourable Mention to Mr. Albert Herbert.

The Owen Jones Studentship and 100l.—Three applications were received for the Owen Jones Studentship from the following gentlemen:—1. Vivian John Cummings, London; 2. John Stewart, Bridge of Allan, N.B.; 3. Edgar T. A. Wigram, London. The Council have awarded the Certificate and (subject to the conditions, among others, that the said candidate devote a tour of not less than six months' duration to the improvement and cultivation of the application of colour as a means of architectural expression, and furnish the Council with an original design in coloured decoration of a prescribed subject) 100*l.* to Mr. John Stewart.

The Godwin Medal and 40l.—One application was received for the Godwin Bursary from the following gentleman:—1. E. W. M. Wonnacott (London).

The Council have awarded the Medal and (subject to the condition, among others, that the said candidate spend not less than five weeks in some part of Europe, other than Great Britain and Ireland, or America, for the purpose of studying and reporting on works of modern architecture) the sum of 40*l.* to Mr. Wonnacott.

The Ashpitel Prize.—The Board of Examiners (Architecture) having reported that none of the successful candidates in the Final Examinations of 1898 has distinguished himself sufficiently to deserve the Ashpitel Prize, value ten guineas, the Council have awarded a prize of five guineas to Mr. Charles Riddey and Mr. John Kirkland, respectively.

The Arthur Cates Prizes.—Prizes of Books to the value of Ten Guineas offered by Mr. Arthur Cates, ex-Chairman of the Board of Examiners, to the students whose testimonies of study for admission to the Final Examination are considered by the Board to best merit the prizes, provided they pass the examination for which the said testimonies are submitted, have, on the recommendation of the Board of Examiners (Architecture), been awarded to Mr Albert Herbert, of Leicester, for the June Examination; and to Mr. H. Inigo Triggs, of London, for the November Examination. An extra prize of five guineas has been awarded to Mr. Henry Tanner, jun., of London, for his testimonies of study submitted for the latter examination.

THE TRAVELLING STUDENTS' WORKS IN 1898. *Pugin Student.*—The Council have approved the work of Mr. Charles de Gruchy, who was elected Pugin Student for 1898, and who travelled for three months in Cornwall.

Tite Prizeman.—The Council have approved the work of Mr. John Stevens Lee, who was awarded the Tite Prize in 1898, and who travelled in Italy.

Aldwinckle Student.—The Council have approved the work of Mr. James B. Fulton, who was awarded the Aldwinckle Studentship in 1898, and who travelled in Spain for a period of not less than eight weeks.

Owen Jones Studentship, 1897.—In view of the work at present being executed at Constantinople by Mr. A. E. Henderson, the Owen Jones Student of 1897, the Council have decided to grant him a sum of 50*l.* out of the Owen Jones Fund, being the value of the Studentship not awarded in 1898.

BUILDING BY-LAWS IN RURAL DISTRICTS.

Mr. Lacy W. Ridge then moved the following series of resolutions, viz.:—

That the administration of local building by-laws in rural districts is a matter calling for the action of the Royal Institute.

That the Council be requested to communicate with the Local Government Board on the subject, and to appoint a Special Committee to consider and take action thereon.

That matters of sanitation, including the preparation of the site for building, should in all cases be carried out under the supervision of the Local Authorities. That where separate tenements adjoin they should be divided by party walls of incombustible material. That the interests of the public in buildings in rural districts are not such as to justify any further interference on the part of the public authorities with the construction of buildings.

He remarked that as to the first resolution the matter was one distinctly interesting to architects and their clients, because they (the architects) were called upon to supply drawings and to submit to certain regulations in rural districts with regard to buildings which were decidedly onerous. These added to their duties and increased the expense thrown upon their clients for professional work entrusted to them. The second proposition naturally followed from the first. Now, he had confidence in suggesting that they should go direct to the Local Government Board. He advocated this because their assent was necessary to any building by-laws which might be made by a Local Authority. It was, therefore, through that Board and by their power that any by-laws were made to govern the practice of architects in country places. The larger towns were quite able to take care of themselves in matters of this sort, but country places had nothing like the same power to adopt by-laws suited to their particular requirements. In the large towns the Boards were in a position to pay competent surveyors who were well able to take care of the interests of their districts, but in the country areas men with very small salaries were selected; and, on the whole, it could not be said that they were in the position to frame their own by-laws; they were in fact dependent on the Local Government Board for those which they put forward. Since these model by-laws were first framed the Metropolitan Building Act had been passed into law. That meant to them a matter of considerable importance. For one thing, they had greater liberty in building design than there was under the old Act. But these model by-laws, although they might be applicable to large towns, where people were crowded together, were certainly very inapplicable in country districts He would venture to declare that there was no necessity at all for a large majority of the by-laws in force over the country districts. His view was that if they could persuade the Local Government Board to draw up a series of by-laws which would apply to large towns, and others to apply to rural districts, they would be relieved of the necessity for a great deal of unnecessary legislation, of the necessity for a great deal of unpleasant supervision and of unpleasant intercourse with men who knew very little about practical building, but who knew a great deal about the by-laws, which they were bound to enforce, and which they did enforce, whether they were of any practical use or not. Among the powers they possessed was that of coming in and enforcing the taking down or altering of any work that had already been done contrary to the by-laws; and of asking for accumulative penalties. It was terrible, if they thought of it, that a piece of woodwork protruding within 4 in. from the wall, should be an infringement involving an accumulative penalty. Architects were, therefore, in a false position in this matter. In his view they should have the same means of ascertaining as under the London Act as to what they were entitled to, and what the Local Authority or Surveyor could legally enforce. Of course they could go before the magistrate to get their penalty enforced, but they did not do so because they were often afraid to. What he wanted was a committee of men who did not regard the London Building Act as if it contained everything of the eternal fitness of things designed. The third proposition he submitted to the meeting attempted to show the lines upon which these things might be arranged. He could not conceive that the public could have the slightest interest in a man's building when he erected it away from those of his fellows. A man building on his own account and for his own usuage, except so far as health was concerned, need have no fear of making himself a nuisance to his neighbours. Moreover, he saw no reasons why exemptions should be allowed —not even in the case of railway stations. But where two country houses adjoined they should certainly be divided by party walls of incombustible material. But beyond that no further interference was desirable or necessary. He asked the meeting to definitely commit itself to the two first propositions, but as to the third he would be satisfied were it made a general instruction to the committee.

Mr. Woodward seconded the resolutions. He said that those who had to put up with what Mr. Ridge described as unpleasant supervision felt keenly the necessity for some alteration. A matter which scarcely came within the purview of the present discussion was that of magisterial jurisdiction. He trusted that when anything was done towards the amendment of the law it should be provided that all matters as they arise under the Building Act should be removed from the police-court magistrate to a tribunal which would understand the subject.

Mr. Fawcett said his feeling, derived from dealings with the Local Government Board, was that they would meet the Institute in a friendly and pleasant manner. Some years ago some of them had to frame a set of by-laws for Cambridge, and he could only say that they were received by the officials of the Local Government Board with the greatest courtesy. What was more, they yielded to the reasonable suggestions made.

Mr. J. Douglass Mathews remarked that instead of the Local Government Board by-laws being regarded as models, they were taken as actual by-laws, and had been adopted in their entirety by local bodies. He remembered that at the time they were framed it was thought that the Medical Officers had had very much to do with them at Whitehall. Perhaps they saw—or thought they did—rather further than architects, but so far as matters concerning public health were affected, the Institute would do well to make it clear that they did not wish to modify anything or relax any requirements

unless it was to the advantage of the country generally.

Mr. Owen Fleming supported the resolutions, believing with Mr. Ridge that there was a tendency to impose cast-iron regulations in places where they were not altogether suited. The only point that occurred to him was how far did the Institute wish to go? Would it not be well to give the Special Committee an entirely free hand in regard to resolution 3?

Mr. E. Woodthorpe said he wished to endorse Mr. Owen Fleming's suggestion, but he could not agree with Mr. Ridge that the Practice Committee was entirely a townsman's committee. It must not be forgotten that a great many architects had country practices as well as town.

The Chairman said he could not help feeling that Mr. Ridge was quite right in what he said—that the country members would be of great assistance.

Mr. Guy Dawber said it was only too true that some of the rural by-laws were vexatious, embarrassing, and unpleasant. In many small rural districts the by-laws were taken *en bloc* from those operating in London, Birmingham, or some other large town, and, what was worse, they were enforced by men who had practically no knowledge of building at all, such as farmers or small tradesmen. As a general rule, too, a man was appointed District Surveyor in these regions because he had been a good Inspector of Nuisances. These men were very fond of carrying out the by-laws to the letter.

Mr. Gordon Smith said he was very glad that Mr. Ridge had raised the question of rural by-laws, and he could only say at the outset that the Local Government Board would give any representation made by the Royal Institute the utmost consideration. So far as his experience went—and he had obtained it after discussing the question with a great many architects throughout the kingdom—he thought there was a great absence of knowledge of the circumstances under which by-laws could be made. The model by-laws were framed in 1877, having been in course of preparation for some few years prior to that. They were drawn up to assist Local Authorities under Sec. 157 of the Public Health Act, 1875, which gave to Urban Authorities only power to make by-laws on certain specified subjects. All that the rural districts could do prior to the Amendment Act of 1890 was to obtain urban powers to make by-laws; that was to say, where a Rural District Council found that its district was developing into a town, it could apply at once to the Local Government Board and obtain powers to make the same by-laws as an Urban District Council. Under that provision many Rural District Councils obtained the powers and adopted by-laws based upon the model. In many cases he had personally suggested modifications of the model by-laws to diminish stringency and there were now published a vast number of modified clauses, which went a long way to relieve the oppression—if he might use the term—caused by the original model. It was in consequence of repeated complaints that the Legislature—and all the Local Government Board could do was to act under legislative powers—had passed the Public Health Acts Amendment Act, 1890. This Act extended the power afforded by the Act of 1875 so as to give Rural District Councils power, after adopting the Act, to make by-laws on certain specific subjects, among others, with respect to the walls and foundations of new buildings for purposes of health. Rural Districts could therefore now make by-laws without any difficulty whatever, so far as foundations and walls were concerned, for the purposes of health.

Mr. Ridge said that if the by-laws stopped there he would not mind.

Mr. Gordon Smith added that the Rural District Councils could also make by-laws with regard to drainage, but not as to fire prevention, unless they were given special urban powers. It had been said that Rural District Councils were not competent to make by-laws. The Legislature had thought otherwise, and rightly or wrongly, they can now do so. Personally, he was not prepared to admit that they were less competent to make by-laws than Urban District Councils. He did not know upon what ground the assertion was made; at any rate, he was not prepared to accept it. A complaint had been made that the authorities had power to enter a partly-finished building, and pull down what was built in contravention of the by-laws. Was that a source of hardship? If by-laws were to be carried out, power must be conferred upon the body charged with enforcing them, both as regards the power of entering and of penalties. Then with regard to the tribunal for dealing with complaints, the Legislature had laid down the police-court or the bench of magistrates as the competent court in the first instance, and if the decision there obtained were not satisfactory it was competent for the parties to the case to go to the Higher Courts. He did not desire to oppose the resolutions. On the contrary, his inclination was to agitate for a very much higher committee to go into the whole question of the operation of the building laws all over the country, to ascertain how they worked, and whether they could be amended and improved with advantage.

Mr. Ridge, in replying, said he believed the evil he complained of arose from the desire of a very small place to regard itself up to the level of a growing town. As to the third resolution, which had been adversely criticised, he desired no more than that it should be an indication to the committee of the line of conduct it should go upon.

Eventually resolutions Nos. 1 and 2 were agreed to, and No. 3 dropped.

The Chairman announced that the next meeting of the Institute would be held on the 23rd inst., when the President would deliver an address to students and distribute the prizes and studentships.

The meeting then terminated.

COMMON ERRORS IN ARCHITECTURAL DESIGN.*

ON the threshold of every subject of this kind there is a guardian shape, dimly perceived but undoubtedly real, that holds up a warning finger and bids us note the ground is treacherous and infested by will-o'-the-wisps and Jack-o'-lanterns. In other words, he who ventures upon artistic criticism of any kind must remember that in such a realm tangible facts are scarce, and absolute right and wrong possibly non-existent; that rules of conduct, however useful and applicable in many, perhaps in most, cases, are occasionally ignored with good results; and even that what is disastrous in one instance may lead to a glorious victory in another. He must also feel daunted when he remembers how quickly opinion on questions of architectural design changes, and, as far as one can see, may continue to change. Those of us who have reached middle age, and still more those who have passed it, must often, if they are at all cynically inclined, reflect with a great deal of amusement upon the confidence and enthusiasm with which the ideas prevalent in their youth and at various times since have in turn been urged—and accepted—and abandoned. It does not do, however, to be daunted by difficulties and dangers, and there is some encouragement and consolation in the knowledge that science, with all its boasted accuracy and certainty, is in little better case than art. How many of the scientific theories driven into us at school, or laboriously absorbed at a technical college, have since been shown to be myths! Yet science does not shrink from the attempt to get to the root of things; it only accepts its so-called facts with ever-increasing caution, and strives to test its theories by more systematic and more carefully conducted experiments. In art we have not arrived at making systematic experiments, or, indeed, experiments in the usual sense of the term at all; perhaps we never shall, and perhaps if we did they would not help us much; but we need not abandon the semi-scientific method of trying to learn from what we see about us some rules for our own conduct because many of the conclusions our predecessors drew do not now appear to be justified.

I suppose, as architects, we do not all attach precisely the same value to the æsthetic side of our profession. It looms larger or smaller in the mind according to the natural bent and the training of individuals, and very likely also to a large extent according to the opportunities for dealing with it that practice brings. But the tradition that architecture is a fine art is alive, though sometimes very sick, in every architect's office; and there is not one, I verily believe, who does not, in most cases, try to make his works beautiful. Even those who, with something of the wisdom of the serpent, proclaim themselves "practical" men without doubt cherish this desire; though they think it pays best to keep it in the background and rest their claim to employment upon that skill in other matters which, in most cases, they do not possess in any higher degree than their fellows, but which they make a careful display of. Our employers, the public, too, undoubtedly desire that buildings shall be beautiful. They are generally careful not to put that desire too prominently forward when they come to us; because they have an idea that beauty in a building is a far more expensive matter than it really is—except to the architect; but you may always perceive that the desire is there, not only when they say they would like "something sightly," but "do not want to spend much on ornament," but even when they say regretfully that they "cannot afford to spend *anything* on ornament," and want "quite a plain building." The word ornament almost invariably occurs in such instructions, and generally in such a way as to show that the idea of architectural beauty is inseparably connected in the mind with that of ornament. The idea of beauty apart from ornament, if it has been conceived at all, is entertained as a very dim and indistinct possibility—a thing it would be unreasonable to hope for.

That is an error for which, it is true, there is just this small and slight foundation, that ornament—good ornament, that is, judiciously used—is an element in architecture not to be despised—useful at all times in its place, often interesting in itself and essential, it may be, in the noblest buildings, if only to give that completeness—that air of having spared nothing that skill and labour could do—which is appropriate. But to connect the idea of architectural beauty with ornament any more than with proportion and grouping, the distribution of solids and voids, or of lights and shadows; or, indeed, to put ornament upon the same level of importance with any of these is the vulgarest of errors. Yet it is to this error, more than to any other, that the costly ugliness of our streets is due. The idea in too many street fronts seems to have been to mould and carve everything that could be moulded or carved, to stick a lump of carved ornament wherever there was room for it, and never to mind anything else. And what is one to say of the quality of the great mass of such ornament? That it has any value whatever as art? That it is even in any real sense ornamental? It is impossible to believe that any one—I will not say who has had any artistic training, but who has any sense of form or scale—ever looks at it without a shudder. It is generally composed of formless masses, or if, in rare cases, they have any form, it is sure to be disagreeable; and it is almost always out of scale with the other features and the mouldings of the building; in carving, the depth of relief rarely seems to have been considered at all; and, worst of all, it is placed indiscriminately, not where it would add to the architectural effect or fitness, but wherever a bit of blank space offered a tempting spot to put it in. Very often, too, it is cut up into unconnected little bits and stuck in meaningless little panels.

It may be said that architects are not altogether responsible for these faults; that, even when no instructions to that effect are received, we often know a profusion of carving to be what will please our client best; that if there is to be quantity we cannot afford quality as well; and that we must find room for it where we may. But granted that this is true in the main, might we not, even if we cannot, or do not, draw our own cartoons, exercise more influence on the design of ornament by carefully choosing our carver or decorator for his skill rather than his cheapness; by insisting on seeing some full-sized drawing, if not model, and correcting it as we please; we might thus do something at least to ensure gracious contours and proper scale and relief; while in the matter of quantity a judicious representation of the value of a little blank wall as a foil would probably get us our own way in that matter. As to the demand for excessive ornament generally, though we may not be able to do much in many cases, because we feel it to be both our duty and to our interest to please our employer; yet if, in the numerous other cases in which we have a freer hand, we were to take the necessary trouble to get really good ornament and place it well, so that a persuasive contrast with the usual thing might be set up—or if we were to seize opportunities for showing how little architectural beauty really depends at all on ornament, and how

* A paper read before the Sheffield Society of Architects and Surveyors on January 10, by Mr. Frank Baggallay.

much grace, dignity, and distinction may be had without it—the demand would undoubtedly gradually diminish and probably give way in time to the desire for a reasonable quantity of the best quality of ornament, for no eyes trained to see the best can tolerate what is poor.

In making these efforts to improve the quality of—let us say—carved ornament, it must not be overlooked that if architectural carving is to be really ornamental it must be as carefully designed as, for instance, mouldings—about which we are all so particular. It must have leading and subordinate lines and masses, and lights and shadows; and the lines and forms must be beautiful in themselves; bunches or twisted sprays of foliage without leading lines or contrasts might just as well be merely roughly hacked surfaces, like certain kinds of "rusticated" quoins; they are useful at times to break up a surface, and give it what we call "colour," but no more. Again, ornament must be in scale with its surroundings, miniature or even natural size oak and bay leaves among 3 in. ovolos, and 1 in. fillets look ridiculous; and look still more ridiculous if there be other carving on the same building the scale of which is correct. In this matter of scale, the amount of relief must not be forgotten; shallow carving is as much out of keeping and scale with a heavy, massive style of architecture as minute parts—and *vice versa;* and a similar point is that delicate, refined work is also out of character with picturesque, broken outlines such as one finds in the Rococo and Early German Renaissance.

Many writers and speakers insist upon ornament being what they term "appropriate"; by which they mean that it must illustrate, or be connected in some way with the purpose of the structure it adorns. I confess that this idea does not appeal to me very seriously; there may be no harm in it so long as it is subordinated to more important artistic considerations, but it is very apt to degenerate into mere puerility, and even if it does not do so it tends to distract the aim of the artist, and the attention of the observer, like the moral in a picture or a story. Yet, all too frequently, it is the only point aimed at, and a panel enclosing a bunch of game over a poulterer's door, or a few impossible blue plaice on a fishmonger's stall board, is held to be "appropriate ornament."

As regards the position of ornament, it has often been pointed out that the Greeks, the most sensitively artistic people the earth has ever nourished, almost always put sculpture and carving in shadow; and there can be no doubt it looks best there. It breaks up the darkness with little reflected lights, and with depths of special blackness; and it is itself softened and refined by the shade. It should, I think, never be put in strong light—particularly where it will break up a broad mass of light which may be valuable—without hesitation and a full consideration of the probable effect. Carving has its minimum of effect, and is besides most difficult to design well, when divided up and scattered into small pieces: concentration should be aimed at—concentration in broad masses if possible—if not possible, at any rate concentration at a few of the most important points. I must apologise for dwelling so long on the subject of ornament: but the wholesale and indiscriminate, or injudicious, use of bad, ineffective carving and modelling in particular, and the prevalence also of bad coloured ornament, where it is used at all, seems to me by far the greatest fault in the every day architecture of the present day, and is not unknown in quite important works. It lies in wait and hits you in the eye from every suburban porch, and fires whole volleys at you from the walls in our main streets; it too often shouts at you with brazen impudence in our theatres, and is only useful in those churches where you have to concentrate your attention on your books lest you should see it.

Much might be said of the glories of good ornament rightly used; of the indebtedness of architecture to painting and sculpture, and the host of, so called, minor arts; but the task I have set myself is the ungracious one of finding fault. After the plastering of our buildings with bad ornament, our greatest error, probably, is a somewhat similar one—the tendency to heap up in one restless mass all sorts of various, and often incongruous, forms, features, and materials. We worry our buildings with stripes and dots of red and white, and black and yellow; with here a bit of glazed brick flashing the sunlight into our eyes, and there a polished granite shaft starring it in the midst of a grey stone front. We mix up a bit of red brick, a stone porch, a bit of rough-cast and a bit of half-timber work; a slated roof, a tiled roof, and a lead flat; a few round-headed windows, a few square-headed windows, and a few fancy ones; a bay (you must have a bay, of course—perhaps several of different shapes), an oriel, a turret (with an ogee roof, naturally), a cornice, a few mixed gables, and an assortment of dormers—and we call it a picturesque bit of design. I exaggerate, you say: perhaps I do, but not much. It *is* picturesque, you say: so it is sometimes—at a distance—a sufficient distance to blur the details. But come nearer, and what becomes of the composition *as* a composition? Each feature may have a beauty or interest of its own—it often has; but where is the unity, the dignity of architecture? Where, in fact, is the design? The eye wanders from one thing to another and sees each separately, but none together. If one feature irresistibly attracts the eye, it is an accident—not because it is, or ought to be, the centre of the design, but because of its superior height or its aloofness from the rest—as when a little angle turret rears its intrusive spike above the ridge and distracts attention from the main gable; or because of its incongruity—as in the case of those red granite shafts whose polished sides seem to detach them from all the rest of the sober stonework, even from their own caps and bases.

The multiplicity of our sources of inspiration; the illustrated journals, cheap travelling, and cheap photographs that make us acquainted with all the buildings of the world, old and new; the ease with which we may obtain all sorts of materials; are snares we seem unable to, or, at any rate, do not, escape. They lead us to forget that the very word design, as we understand it, implies unity, or a definite purpose, to the attainment of which an harmonious working together of all parts is as essential as it is to the attainment of any other purpose. They tempt us to abandon dignity, sobriety, and unity in order that we may be able to work in the latest fashionable quirks and twiddles, and all the quaint follies that have taken our own and our clients' fancies. Among all these our main idea—if we have one—soon gets lost. Too frequently we never start with any main idea—it is so much easier to trust that the fascination of all these charming odds and ends will cause the omission to be overlooked.

So much have these temptations led modern architecture astray that it has come to this—a school of clever men has arisen who advocate that we should abandon the study of past architecture and make a fresh start. As clever men some of them do good work, and will very likely do better. But as to the fresh start I am very sceptical. There have been so many attempts at fresh starts, and they have never come to anything. It is very certain that, try as they may, they have not yet escaped, and cannot very soon escape from the influence of the past. That has never happened in architecture—that is in any system worthy of the name; and is less likely than ever to happen now when knowledge of the past is so accessible, and a superficial acquaintance with it almost forced upon us. It is further noticeable that the chief men of this school, both its most prominent advocates and its cleverest designers, are themselves men of architectural culture who have been or are conspicuous for their acquaintance with the work of the past. *Their* originality is generally of the right sort, and, though the enthusiasm of converts sometimes leads them into extravagances which give the enemy cause to scoff, it is *their* work that is admired and that, as a whole, will live, and not that of those followers who, with the self-confidence bred of ignorance, try to evolve architecture out of their inner consciousness. All honour to those who advocate a closer acquaintance with the properties and manipulation of materials; it can do much good, and may lead to the abandonment of many stupidities and the introduction of some new and more reasonable forms in matters of detail; but I do not see how it could ever be made the basis of architectural design in a larger sense. Originality is just now the principal object of worship among us; and one very common error in present-day architectural design is the use of new forms, and new modifications of old ones, merely because they are new, and without making sure that they are either reasonable or beautiful. At the risk of being considered reactionary, I must express a very decided opinion that new forms and features require to be justified, at least to the extent that they are not practical or artistic absurdities. I know a recently erected main cornice which consists of one vast ogee moulding; and, on a wet day, I have watched the water pouring down the ogee on to the walls, owing to the absence of the throat which all the despised old-fashioned cornices have. That is an example of a new form of main external cornice, which is a practical absurdity in this very wet climate. As to what are artistic absurdities: that is, people might say, a matter of taste. Quite so; but taste is a plant that does not grow in every soil, and, in any case, requires years of cultivation before it flowers. One must take it for granted that every architect has taste, or thinks he has; otherwise he would not have become an architect. But there must be some who are conscious that they have not cultivated their natural taste very carefully; and those who have not done so run great risks, when trying to be original, of becoming ridiculous if not offensive. We have but to walk through the main streets of any prosperous place, where there is a good proportion of new work, and note which buildings strike us as good, which as passable and inoffensive, and which as vulgar or ugly, to become sadly convinced that the vast majority of those that display originality must be placed in the last category; and, as a rule, unfortunately, the greater the originality the worse they are. Those of which the details are deliberately copied from old work, though they may not be interesting, are never offensive—provided, that is, the copying be copying and not unconscious originality—and are often pleasing. The few really good works, for which one can feel some enthusiasm, usually show a good deal of originality, either in treatment or in detail, or in both; but they also show, invariably, that their author has a good, often a very intimate, acquaintance with the historical styles.

Originality is necessary in everything if there is to be progress—nothing great can be done in this world without the brains and the courage to be original. But knowledge, and, in art, what may be called a highly cultivated sensitiveness are also required before a man can be original to any purpose. Without them originality is likely to resemble the originality of the new office boy, who leaves your best clients standing on the mat and asks the travellers to take seats in the private room. It is not, I fear, possible for us all to have this highly trained sensitiveness, but neither is it necessary for us all to try to be original for the sake of the originality; there is plenty of room for those who are only able to follow the safe path of imitation. But, even for that, knowledge is necessary. So far from decrying or neglecting the study of the history of architecture—that is, of everything connected with the architecture of the past—it is necessary for each of us to studiously cultivate a thorough and discriminating acquaintance with it; so that we may alway know what we are doing, whether we follow the beaten track, or, if we leave it, in which direction we can go in safety; so that even if we have no definite object in leaving it, but are only exploring, we may not come to grief. It is, perhaps, necessary to ask that I may not be misunderstood. I have a great respect for originality of the right sort; it is not only necessary to the greatest works, but if it springs from knowledge and is guided by good taste, it is itself a source of delight at all times, and worthy of the profoundest admiration just because it is not possible to every one. But the originality that springs from ignorance, and is helped by insensibility to beauty, is ridiculous when it is unintentional, and generally grossly offensive when deliberate; offensive even when the deliberate intention stops far short of seeking grotesque or bizarre effects for the sake of attracting attention; a prostitution of architecture that one is sometimes tempted to believe is not altogether unknown; otherwise the sense of beauty must, in some people, be perverted almost past the possibility of belief.

The temptations to be greedy in the matter of gingerbread ornament; to make a hash by mixing all sorts of things together, and to risk everything to give the dish a new and original flavour, are probably the greatest of those that are apt to overcome the architectural designer of the present day. But there are many other

faults we all of us sometimes fall into, generally from not being sufficiently on our guard ; and among some of the most difficult to avoid are faults of scale. A very large proportion—possibly more than half—of the bad architectural detail that annoys the critical eye is due to mistakes in this matter. The way in which engineers have sometimes used common architectural mouldings and ornaments magnified to many times their proper size has, from time to time, been made the subject of not very flattering remark by architects. But architects themselves commit similar errors, if not quite such glaring ones, rather frequently.

It is true that, within certain not very narrow limits, some kinds of details may be executed to various scales, and always look well. Most of the well-known mouldings and features of the strictly Classic styles, for instance, so long as the usual proportions between the parts are fairly maintained, allow us a great deal of liberty in this respect. But in the Gothic styles the limits are much narrower ; a fact which, when revived Gothic first became popular, few architects, accustomed as they then were to the comparative elasticity of the Renaissance details, recognised ; with the result that they executed mouldings with great cavernous hollows and bloated rolls and fillets wide enough to ride a bicycle on.

This fault has become more rare, but it has not quite disappeared. Fillets seem still especially liable to get too wide, and crockets and finials, even in work that is fairly detailed in other respects, too often look like good-sized shrubs or big cuttle-fishes ; and some gable crosses might serve for cart-wheels, with a little trimming. In Gothic and in the Transition styles, such as Elizabethan and François Premier—indeed, in nearly all except the Classical Roman and the later Renaissance founded on it, the scale of the details varied very little ; and if the modern architect chooses to work in these styles, unless he keeps as carefully to the sizes as to the shapes and contours of the mouldings and ornaments, his work will look either coarse or trivial.

In architecture which is not imitative bad scale is even commoner. In some cases tiny windows, baby squares of glass and mouldings that look like bundles of stair-rods, give a building the appearance of a toy or model. In others the opposite fault suggests that the structure is for the use of such giants as only live in fairy-tales—but the worst, as well as the commonest, fault is the failure to keep the same scale throughout a composition. It is an error easily avoided if the matter is considered, and one can only believe it rarely is considered. It is said, I do not know with what truth, that the late William Burges insisted that all the crockets on a building ought to be of the same size ; all the window lights the same width ; all those roll mouldings of which he was so fond, the same diameter, and so on. That is carrying the matter to an extreme which is not only difficult of attainment, but is unnecessary, and, carried out in its integrity, would generally lead to the destruction of all interest. It is, however, only the exaggeration of a right principle ; similar features of different sizes cannot be used together in the same composition without striking a discordant note, unless the contrast is several times repeated in such a way as to emphasise it itself as a feature of the composition ; or unless the position of the two features is so different that they can hardly be said to be contrasted. A small order, for instance, used for window dressings and repeated on a larger scale between the windows is not really disagreeable, though so often condemned ; neither can you blame an architect for putting a large finial on a main gable and a small one on his niche canopies, though it might be better in both cases if the one feature were not merely an enlargement of the other. A more familiar example still is that of mouldings ; in which it is necessary for effect to mingle large and small members that may often be of similar section with perfectly good effect, the repetition of the mouldings in different parts of the building obviating any sense of discord.

A commoner error than that of using the same feature to different scales is the failure to keep the same scale in the different features. Large, heavy mouldings round small windows and fine, delicate ones round large ones are quite the usual thing ; small scale carving next large mouldings, and large crockets and finials on modern Gothic buildings otherwise normal in scale, have already been referred to ; and similar cases will readily occur to you. In larger matters, towers, turrets, and porches are not unfrequently designed on quite different scales to the main building, and more often still ridiculously small cornices are seen crowning high walls. It is difficult to exaggerate the importance of such errors or of watching closely to avoid them at a time when we are trying to strike out a fresh line, and decline to be kept in order by past precedents. In connexion with the question of scale, one can hardly avoid referring to that perpetual nightmare of the æsthetically sensitive architect, the large sheets of plate glass that we are obliged to use, because the public demands them, and because, however much our taste revolts, it would be a futile absurdity in many cases to ignore their practical utility. Their ugliness is not, as a matter of fact, always a question of scale only ; you can make the most charming open arcade or colonnade ugly by filling the openings with plate glass, which does not alter the scale in the least. But the scale is the chief fault, as any one may see at once who will take a pot of white paint and draw sash bars on any plate glass window. The difficulty with these large sheets of glass is so great that the failure to get over it can hardly be classed with other errors. In the case of very large openings I do not think it has ever yet been satisfactorily solved ; but there are a few buildings here and there where it seems to have been to a great extent overcome, in domestic or office windows by grouping them close together and treating the piers between them more as mullions, thus converting the whole group into one large window in effect, with the size of which the sheets of glass seem more in scale than they do with a number of small windows. These buildings are generally small, and in the François I. or some other phase of the Early Renaissance style, in which the architectural features are more in the nature of surface ornament than structural ; but I do not see why the idea should not be carried further, and applied especially where large sheets of glass are really needed ; that is, in narrow streets, where every inch of light is valuable, and where the reduction of piers to mullions, and perhaps even of lintols to transoms, would help matters very much. Solid piers on either flank, and some blank wall at the top, would be worth trying for in such a case, no doubt ; and if they could not be had, perhaps the spaces between heads and sills of the windows had better be left plain and of a good depth, but the ways in which the idea could be carried out are fairly numerous. I do not think the device of dividing up the upper sash and leaving the lower one in one square is at all satisfactory—it seems to me rather to emphasise the unpleasantness than to get over it.

There is another class of common errors which may be grouped together under the head of sins against common sense. One of these is the erection of arches that would not stand for an hour if they had to carry the load which appears to rest upon them but which is really carried by a concealed girder. There is no harm in the girder, and no harm in concealing it ; architectural realism is out of date, and we think it only decent in most cases to hide the nakedness of girders and give them some protection against fire. But most of us do not like the effect of, say, a front wall carried on a girder over a shop front, and not infrequently some one makes a futile attempt to improve matters by concealing the girder with an arch. The proprietor of the shop will not, however, consent to lose much light or window space, and the arch has to do almost without abutments and with only a few inches of rise ; with the result that the common sense of the observer feels quite as much insulted as if the shop front had been treated in the usual way ; indeed, in the latter case it would probably have passed unnoticed. Arches to the porches and loggias of villas, too, are often built with ridiculously little abutment ; I frequently wonder how some of them are made to stand at all. Good cement and a little hoop iron bond will, I believe, do wonders in that way, but one should not be called on to solve puzzles of such a kind. Another sort of arch which insults common sense, and is a poor, wretched, maimed, distorted creature besides, is the arch in a curved wall ; it has been preached against for several generations, but people still put it up pretty frequently at street corners. Piercing, or panelling, or otherwise frittering the spandrels over the haunches of an arch is another common device to make it look weak. It is possible the arch is destined to disappear in the architecture of the near future ; as a constructive feature it is already fast retreating before the steel girder and concrete lintel. But so long as we retain it, it is desirable it should remain outwardly respectable, and not become an obviously feeble and useless member, that any one can see is only pretending to do its work. Piers, and especially corbels, are liable to err in both directions, sometimes being absurdly large and heavy for what they have to do, and at others being evidently too weak. In modern church Gothic, in particular, the stone corbels which it is common to put under the ends of roof principals, and on responds to spring arches from, are often great clumsy masses, more than twice or thrice the size necessary, and that our ancestors would have made them ; while the cut brackets that pretend to carry the wooden oriels of villas even more frequently look like cardboard toys. The top corners of windows are often worried in a way that is opposed to common sense. Sometimes they are rounded, involving getting the lintels out of much larger stones with a great deal more labour than would be required for square corners ; at other times the corners are cut off either by straight, or more often by convex, lines. In all these cases the window frames and sashes have to be made in a weakened form, at greatly increased trouble and expense, for no advantage whatever, the queer-shaped corners being almost invariably unpleasant in appearance. Another sin against common sense is to put windows near an angle on both sides of it. The second one is not in a position ever to be of more than the very smallest use for light ; in most cases it is not in the least wanted ; it makes the lightest corner of the room liable to be draughty ; and it weakens the angle from the outside, where you can see across through the two windows in a most disagreeable way. Fine art in general is not, perhaps, to any great extent dependent on reason ; it is free within broad limits to do as fancy suggests. But the art of architectural design is in a rather different position — it is restricted by the condition of its being not to traverse the dictates of common sense. It must not only provide for the stability of a structure, but must satisfy the ordinary observer it has done so, and without suggesting to him that the supports would easily carry ten times as much as is put upon them. On the other hand, it must satisfy its æsthetic object without sacrificing the primary utilitarian one by inconvenient arrangements or such little lapses as I have mentioned, or as putting transoms or meeting rails at the eye level, or window-sills at the floor level, or omitting to make provision for blinds, shutters, and so on. Such errors are bad art, as much as the equally senseless fault of putting small mouldings or ornament far from the eye where they cannot be seen, and the big, coarse work under one's nose.

Under the same head, of sins against common sense, may be placed the errors that arise from not considering the nature of the material in which a piece of work is to be carried out. One might have supposed that by this time every one had given up designing or using cast-iron railings composed of intricate scrolls and twisted foliage, as nearly resembling wrought ironwork as possible ; but we know it is not so. Surely nothing could be less sensible ; the railing does not look like wrought iron in the least, and the free ends and delicate work are certain to be broken off in a short time, surely a design more fitted for casting and for a brittle material would be better sense as well as better art. Again, one often sees examples of carpentry or joinery in soft wood—such things as open timber roofs, and doors, dados, and other framings—the design of which is imitated from hard wood originals. That is bad art, chiefly because it is bad sense ; in a few months the framings will warp and split, and in a few years at most the joints of the roof timbers will have to be strengthened with iron straps and bolts. Terra-cotta is another material that is very frequently wrongly treated. Men build plain walling of terra-cotta, though it is quite unsuited for such a purpose ; the blocks have to be cast hollow and filled up, and do not produce nearly as good a surface as brick. And they use it too for cornices, architraves, and so on, consisting of plain mouldings which show every irregularity in the burning by their broken lines. The old terra-cotta buildings in North Italy were more sensibly treated It is very little

more trouble to cast a number of blocks from an ornamented model than from a plain one, and the ornament hides bad joints; accordingly, almost all members of their mouldings were freely ornamented with some repeating pattern; friezes, voussoirs of arches, and so on, being treated in the same way. A few important ornaments, say for key stones or to break a freize at regular intervals, were specially modelled; and all the plain walling was done in brick. That was good sense, and in many cases the art was good too, and there is no reason why a similar treatment should not succeed now and remove the stigma from a useful material that some architects, who have a good deal of excuse for not liking it, contemptuously call crockery.

There is one class of errors which I approach with very great diffidence, namely, those of bad proportion. Good proportion is traditionally at the very foundation of good architecture, and it is unquestionable that the trained eye is very critical in the matter. Yet if you consider it, except in the case of the Classic orders, no particular ratio between parts or between height and breadth has ever, so far as we know, been generally accepted or adhered to. In other features, almost every conceivable ratio has, at one time or another, been used with good effect; and even the traditional proportions of the orders have been disregard both in ancient and modern times, in many cases with advantage, certainly often without any perceptibly bad result. It seems to me probable that the usual ratios between the height, breadth, and thickness of individual architectural features having in most cases been established originally by utilitarian considerations of various kinds, the eyes of observers have, from time to time, become accustomed to these ratios and ready to be offended by any very serious departure from them until new ones have, in spite of them, become established. It is certain that if you do it judiciously you can depart from the customary proportions of any feature a little way without offence and even with the best results in the direction of giving character to a building, only you must guard yourself carefully from going too far, and must do it systematically. It seems fairly obvious that if the eye is accustomed to seeing, say, piers or columns, the thickness of which bears a certain proportion to their height, and you make the proportionate thickness a little greater, or the height a little less in a certain case, they will merely appear unusually sturdy; if you do the opposite they will seem unusually slight; but if you go too far in either direction they will become absurd. I think, however, that the great point to note is that if you make one feature sturdier or more slender than people are accustomed to, you give it a character which you are, as a rule, bound to carry out in the other features of the composition, under the penalty, if you do not do so, that its marked proportions, in the absence of any special circumstances to justify them, will seem out of place. Bad proportion in this sense is one of the commonest of faults and arises either from want of observation of what the usual proportions are, or want of consideration of the effect of varying them.

Bad form—that is, an unpleasant outline or contour—even where it does not arise from these errors in proportion, may sometimes be referred to a similar cause. For while a moderate variation on a familiar theme is readily accepted as a pleasant play of fancy, if it is appropriate and in keeping with the general character of the building, a greater divergence from the normal becomes grotesque. That is possibly one of the sources of unpleasantness in the outline of some brick gables. A large number of other forms are unpleasant because they clash with those about them, the character of curve or length of line is different, or the scale is wrong. They might, in fact, be good enough elsewhere, but are out of place. Whether some of the outlines one sees could be pleasant anywhere I should not like to say. It is at times hard to believe; but there probably is a reason of some sort for their ugliness if one could hit upon it.

Errors in planning, so far as its object is utilitarian, hardly come within the scope of this paper: the subject wants a whole cycle of papers to itself; but the frequent—one might almost say general—neglect of opportunities to provide for architectural effects in planning, especially for interior effects, certainly does so. The art of planning to make the most of a site, and to provide the most convenient and healthy arrangements, has arrived at far greater perfection in these days than at any previous period; but the art of planning for architectural effect appears very often to exhaust itself in the effort to provide ingles (or ingle nooks, as the ladies' papers call them). Ingles are all very well, but neither alone nor even in combination with "cosy corners" are they the only possible effect even in domestic planning, and the architect who had to trust to them as his sheet anchor would be rather lost if he came to dealing with a public building. There never were, and I hope there never will be, builders who took less trouble than we—*i.e.*, English architects as a whole—have done for many years to get a little effect by, say, such little things as shaping up rooms or centring doorways, not to mention subtle lighting or the charms of cunningly-devised staircases, galleries, and corridors. Many of our public civil buildings in particular have suffered from the purely utilitarian lines on which they have too often been planned, and the introduction of a sort of easy, domestic feeling which is inappropriate and undignified. On the Continent, as in England up to well into the present century, even small houses and flats have something in the shape of an architectural entrance-hall. If it be but a little lobby it has a regular plan—a square, an octagon, a circle, or some other. The doors are centred, if necessary, by some contrivance of piers or arched recesses or niches; and there is very likely a shallow domed or vaulted ceiling. In the rooms some trouble is taken to avoid such contrivances as the single rounded corner, the door and window opposite to nothing, and in the centre of nothing in particular—in fact, where they chance to come—which are the characteristics of most of our rooms now. We are getting better in such respects, no doubt, but we have much lee-way to make up, even in our domestic work, which is our strongest point as against other countries; and in particular we must get rid, as quickly as we can, of our long, narrow, entrance passage and the uninteresting straight staircase at the end of it. In our public buildings our greatest fault of plan is a mean cramping of halls, corridors, courtyards, and staircases, a general absence of spaciousness and graciousness, and frequently a tendency to a rabbit warren intricacy of passages and rooms, very convenient sometimes for officials who know all their ins and outs, but very undignified, and very inconvenient for the public who have business inthe building. A simple straightforward system of plan should be a *sine quâ non* in a public building, and spacious and dignified courts, halls, and staircases are as much a necessity as a fine exterior before a building can be considered a successful architectural work. Planning often has less influence on external effect than on internal; and the possibilities in that direction are less often overlooked, the only common fault being, I think, the failure to suggest the depth or solidity of buildings by allowing the external walls to hide everything. If there can be a higher structure visible behind them or even part of the building higher than the rest and showing a flank wall, it is an enormous advantage.

To return to interior effects. Nothing has more influence upon their success than the position and size of the windows. Our ideal seems to be a flood of light everywhere, and with this object in view the general tendency is to put a window wherever one is possible, and, subject only to the exigencies of the external elevation, as large as possible. This is a serious error. It comes partly from our cramped plans, which often make lighting a serious difficulty; but it comes, too, partly from not sufficiently considering that equal light is not required, and is not possible everywhere; that light means shadows, and that it is our opportunity as well as our business to regulate the position and size of the lights and shadows, and not leave the matter to chance. In offices and workshops and elsewhere where light is all-important, not much, perhaps, can be done; but neither do we want to do very much there: it is in the public parts of buildings and public rooms where we both can and desire to get our effects. End lights in corridors, though often necessary, are never effective: they make the ceiling and both walls dark throughout by the long shadows they cast from every projection, while the floor, on the contrary, is all light; add to this, that in walking down the corridor the light is directly in your eyes, and the proof is more than complete. Side windows that throw the shadows of their mullions and transoms on the floor and walls, or even that merely alternate broad gleams of light with patches of shadow, are, on the contrary, charming. If these occasional windows can be put in deep recesses, so that from a short distance you do not see them, but only the light from them, the effect is still better. Æsthetically it is almost always better to light the upper part of an apartment more strongly than the lower; if you can get clear-story windows, or otherwise throw the light on the ceiling or vaulting, and leave the floor comparatively in shadow, you can be nearly sure of a pleasant effect, and the windows being so far above the eye-level, they do not dazzle the spectator. On the other hand, a top light which throws the chief light on the floor, leaving the ceiling in shadow, is also often successful. But the great point is to have shadow and light contrasted, and, if possible, broken up each by the other; and not to allow all interest to be lost in one broad flood of light or cloud of shade.

I have made these scattered remarks with a great deal of hesitation as merely the result of my own reflections. I am not so foolish as to suppose that they are a very valuable guide to the art of architectural design; but I hope there is something in them, and that they may induce some of my colleagues to ask whether there is not, at any rate, something to study and think about in the several matters referred to. I think students especially should beware of despising such questions as beside the main point, whatever be the lines of practice they expect to take up. Design may be largely a matter of common sense; but it is also largely a matter (for which there is time in our student days) of training the eye and the understanding through a series of years; besides, a bad habit of carelessness in designing, once acquired, is as difficult as any other bad habit to drop. It is an error, though not now, I hope, a very common one, to suppose that the design of manufacturing and commercial buildings is of no importance. A mill, perhaps, does not as a rule afford a man much opportunity, though I have seen some very fine architectural effects produced in mills. But the beauty of our streets is mainly dependent on the office and shop fronts. From the point of view of general effect, and if such a thing were conceivable, one might almost forgive bad architecture in the few public buildings of a town if all the ordinary work were good. But it is a similar case to that of taking care of the pence; if you take care of the individual effect of the ordinary street fronts the effect of more important erections and of the whole will take care of themselves.

There is just one more thing to consider which may influence some. Architecture, at any rate the external architecture of buildings, cannot be hidden like pictures or statues, it is always there to be seen by every one who passes, every time he passes; and this gives architects an enormous power to influence public taste. It is not too much to say that, more than any other body of men, we are guardians of the public taste in the fine arts. Let us remember our responsibility and be worthy of it.

ARCHITECTURAL ASSOCIATION DISCUSSION SECTION.

AT the sixth meeting of the session held on the 13th inst. Mr. H. V. Crawfurth Smith opened a debate on "Recent Works on Specifications," with special reference to the books on that subject by Mr. F. R. Farrow, Mr. F. W. Macey, and the *Builder's Journal*.

Mr. Smith said he was not in a position to speak of the three works mentioned, but was able to bear testimony to the value of the little book by Mr. Leaning. He then went on to describe the necessary qualities of a good specification. He said the architect, in his double connexion with client and builder, must, if he wish to ensure the respect and confidence of both, stand or fall by his specification. The fundamental idea of a specification was supplying what the drawings could not show, and to this idea they could not attach too much importance. Dimensions shown on the drawings need not be repeated in the specification. Certain clauses liable to be ignored, such as the flushing of joints in brickwork and timber holding up the full sizes specified, should be written in red ink.

Mr. G. H. Smith continued the discussion, saying that any paper or book brought out with a view of minimising the drudgery of writing a

specification demanded careful consideration. It did not follow that because a man understood design and construction of buildings he was competent to write a specification. As with building construction, a man used a text book at first to learn the theory. A text book on specification would give a man a skeleton, and merely suggest the variable covering. From this point of view Mr. Macey's book was too bulky; for instance, to hunt through all the mass of clauses for the description of the joinery of a window would take too much time. On the other hand, he thought Mr. Macey's book most useful for reference on construction. The periodical "Specification" aimed at being a desk-book of reference of all kinds, and as such might be very useful. The "practice notes" and description of materials were easily referred to, and might be increased with advantage. He felt sure the books under discussion would be of service to many, and a judicious use of them would tend to lighten our labours considerably.

Mr. W. E. Johnson doubted whether works of specification were of much value except as guides to students in learning how to write a specification, on the ground that ready-made clothes seldom fit. He dealt in some detail with Mr. Farrow's book, which he spoke of as a most useful work, but which contained a few points requiring correction.

Mr. Max Clarke spoke of the danger of sacrificing lucidity to brevity. It was all very well to say "be brief," but people who wrote briefly did so either because they did not know what they were writing about, or because they had not time.

Mr. C. H. Strange said that the present craze for writing books on specifications was sure evidence that a need existed amongst architects for some reliable work of reference on this important subject. The new books under discussion might be divided into three classes: (1) the works of Mr. Leaning and Mr. Farrow intended to guide students in right methods of specification writing; (2) the work of Mr. Macey, which was a much larger and more important work, intended to supply an architect with every detail he could possibly require; and (3) the work entitled "Specification," which set itself out to be a work of reference. He thought that with its numerous careful sketches and descriptions and its copious index, Mr. Macey's book would prove a most valuable one. Speaking of "Specification," he thought its low price would ensure its entrance into every architect's office in the country; but its arrangement and scope were open to considerable criticism. Mr. C. H. Brodie and Mr. A. S. Tayler also contributed some remarks; and Mr. Leaning, the chairman, summed up the discussion by comparing the three books as to their treatment of various subjects, and pointed out many discrepancies.

*** We may point out to the members of the Discussion Section that Mr. Farrow's book, which first appeared in our columns, was not intended to give examples of every kind of possible clause in a specification, to copy from without thought (which seems to be what some of the members prefer), but was intended to put the student in the right path and encourage him to think for himself. Those who do not like the trouble of thinking for themselves will, no doubt, prefer another kind of book. It was not for them that our publication was produced.—ED.

COMPETITIONS.

REBUILDING OF THE SESSIONS-HOUSE, OLD BAILEY.—The City Lands Committee of the Corporation are making arrangements for the re-building of the Sessions-house in the Old Bailey. They have consulted Professor Aitchison, R.A., the President of the Royal Institute of British Architects, who has suggested a competition among a limited number of architects to be nominated by the Council of the Institute. The committee, adopting this suggestion, have approved of six architects being nominated by the Council on the understanding that the acceptance of any of the designs submitted should not be binding upon the Corporation.

ARDROSSAN AND SALTCOAT HOSPITAL.—Mr. Guest Luckett, one of the three architects whose plans were specially considered in this competition, writes to say that he is of Aylesbury, not "of Glasgow," as stated in our issue of January 7.

ARTISTIC DECORATIONS FOR THE PARIS EXHIBITION.

THE following is the list of the principal artists who will be employed by the French Government in designing and executing decorations for the buildings for the Paris exhibition of next year.

At the large art-palace on the Champs Elysées the sculpture which is to form the termination to the pylons will be executed by MM. Verlet, Lombard, Allar, and Tony Noël. The figures flanking the entrances will be by M. Peynot and M. Gasc; those between the columns, which are to symbolise the Arts, are entrusted to MM. Cordonnier, Carlès, Puech, and Ferrari. The wings and colonnade of the principal façade will be decorated with statues by MM. Labatut, Boutry, Clausade, Lefèvre, Enderlin, Suchetet, and Hugues. M. Recipon is to execute two quadrigas in bronze. Above the side entrances will be groups executed by M. Carly and M. Theunissen, and two seated statues by M. Convers and M. Greber. In the intermediate portion of the façade M. Sicard and M. Theunissen are to execute two seated figures to be placed above the coupled columns. M. Barrias is commissioned to execute a large seated figure to be placed above the main entrance. The attic will be decorated by four groups by MM. Larche, Allar, Coutan, and Marqueste. At each end of the façade will be a group consisting of a seated figure and two children, one group to be executed by M. Mercié and the other by M. Tony Noël. MM. Sicard, Baralis, and Fagelle are to model a frieze in Sèvres ware after a cartoon by M. Joseph Blanc, symbolising the History of Art. Another frieze, in mosaic, will be placed within the front colonnade, executed by specially selected mosaic workers, from the designs of M. Fournier.

At the entry to the new bridge, "Pont Alexandre III.," will be pylons surmounted by a Pegasus and a figure of Fame, in gilt bronze. At the side next the Cours la Reine, on the right bank, there will be two groups entitled "Vox Pacis," by M. Fremiet. In corresponding positions at the Quai d'Orsay, on the left bank, will be two groups by M. Steiner and M. Granet, under the title "Vox Gloriæ." At the feet of the pylons are to be four seated figures in stone symbolising France at different epochs; on the right bank "Mediæval France" and "Modern France," by M. Lenoir and M. Gustave Michel; on the left bank "France of the Renaissance" and "France of Louis XIV.," by M. Coutan and M. Marqueste. In front of the bridge, to right and left, will be two groups of lions and genii, to be executed by M. Dalou and M. Gardet. On the balustrade of the bridge will be figures representing river deities, to be executed by M. Morice and M. Massoule. M. Gauquié is to design the large lamp-standards for the bridge. On the pedestals at the foot of the steps to the bridge will be large vases surrounded by groups of children designed by M. Dagonet; and the cartouche which will form the central decoration of the bridge itself will be designed by M. Recipon. The general design of the bridge is due to M. Cassien-Bernard, architect, and M. Victor Cousin, engineer, working in conjunction; so that the whole is the joint product of engineer, architect, and sculptors.

It will be observed that on these two structures above-named the French Government have contrived to find work for nearly all the most eminent French sculptors of the day. What an example to our own Government, from which the best English sculptors can hardly hope for a commission!

METROPOLITAN ASYLUMS BOARD.

MR. R. M. HENSLEY presided on Saturday at the fortnightly meeting of the Metropolitan Asylums Board, at the County Hall, Spring Gardens.

Proposed Permanent Architect.—The Board proceeded to discuss the motion of Mr. J. Brass, adjourned from June 18 last:—"That it be referred to the Works Committee to consider and report if it would not be advisable to appoint an architect to the Board." Mr. Edward White, L.C.C., now moved an amendment that the question should be referred to the Works Committee "with power to consider and report whether it is desirable for the managers to appoint an architect or surveyor, or architect and surveyor, and, if so, under what terms and conditions and for the performance of what definite duties." He did not think that a permanent architect, if appointed, ought to deal with all questions coming before him, because with so many large interests as they had, it would be unwise to debar themselves of the services of outside architects. But there was a large quantity of work for which, in his opinion, it was advisable that they should have a permanent architect.—Mr. Brass, the mover of the resolution, and Mr. Purchese, the seconder, accepted the amendment proposed, which was then seconded by Mr. W. Crooks, L.C.C., who said that it might be well for the committee to consider, in addition to the question raised in the motion, whether the Board ought to have a superintending architect. In addition to having an architect to advise and to plan small work, some one ought to be in possession of the various plans and specifications which were drawn up. At present there was no one of whom members could ask a question; there were not even copies of the documents, only the originals. A member desiring information was not helped in the least. The motion, as amended, was carried.

The Singular Claim by Contractors.—The Works Committee reported with regard to the claim of Messrs. Kirk & Randall, contractors, for damages to the amount of about 34,000*l.* for alleged delay in delivery and non-delivery of plans on the part of the architect of the Grove Hospital. The committee had had before them the architect's observations, and also further claims on the part of the contractors. As the result of their consideration of the question, they failed to find any ground for assuming any liability on the part of the managers, and were not prepared to advise the Board to accept the suggestion of the contractors for a reference to arbitration. They had instructed the solicitors accordingly.

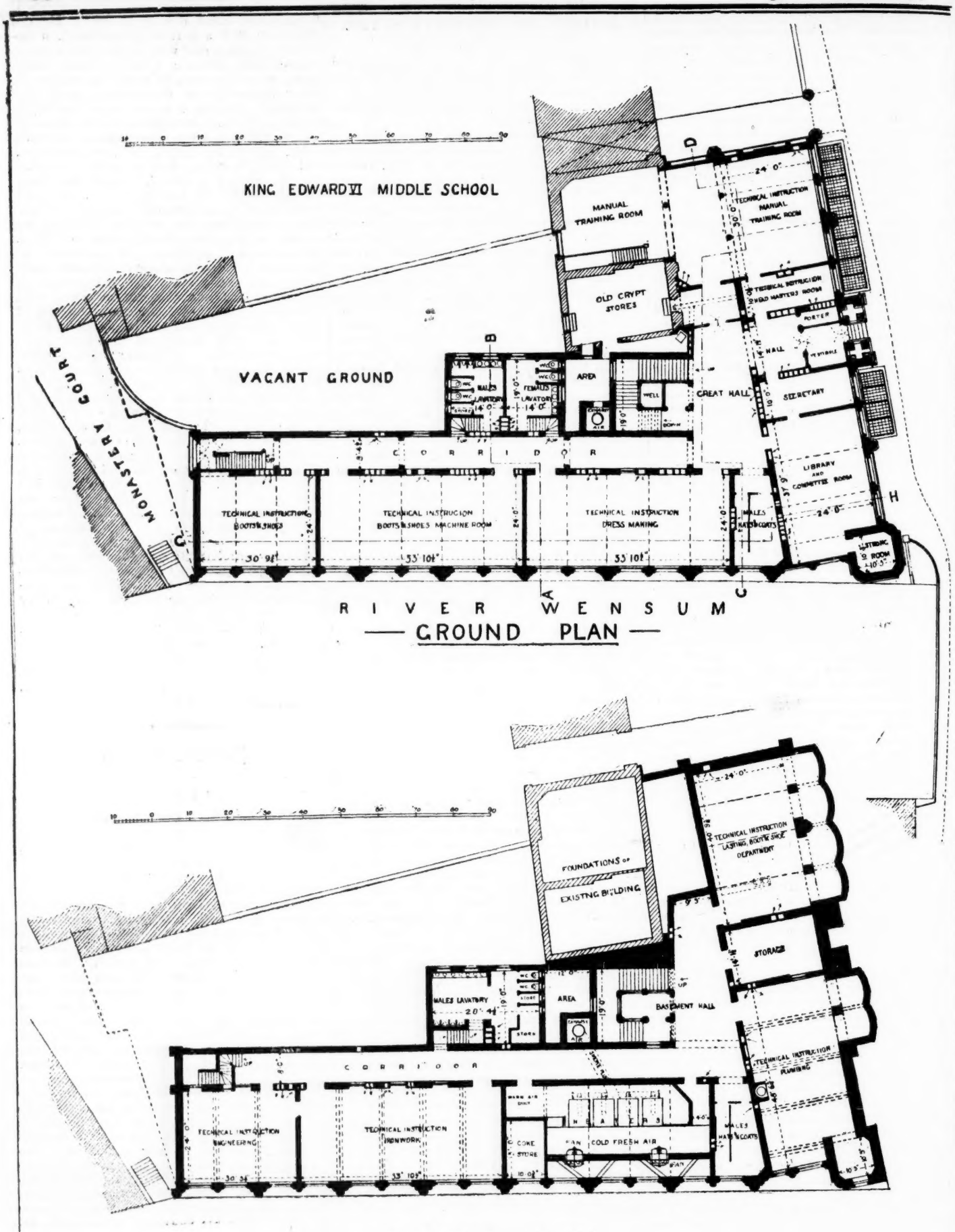
Appointment.—Messrs. Treadwell & Martin, architects, were appointed to prepare detailed plans and specification and to superintend the execution of boundary fences and gates at the Southern Hospital, at a fee of 100 guineas. The estimated cost of the fencing was 2,100*l.*

Illustrations.

PALAZZO DELLA RAGIONE, VICENZA.

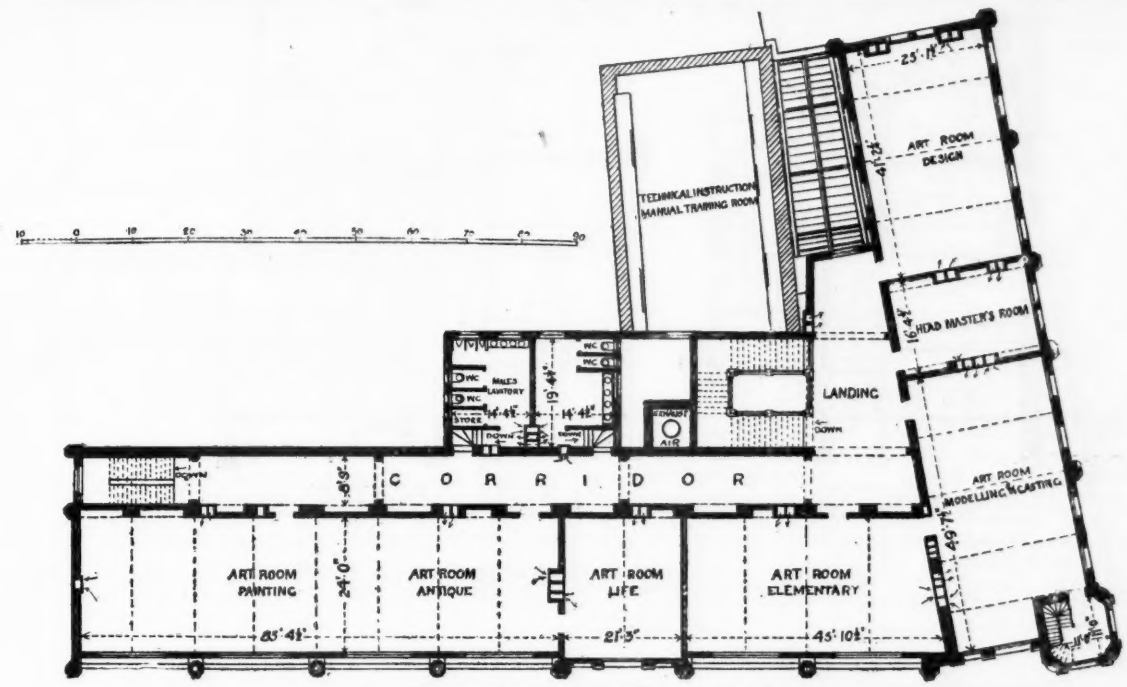
THIS magnificent building was the result of a limited competition held at Vicenza in 1549; a fact which might well be borne in mind by those who see in the system of selecting designs by competition nothing but inevitable iniquity. It is one of Palladio's noblest, as it is one of his earliest designs. It belongs artistically to the Early rather than to the Later Italian Renaissance; it may be described as Early Renaissance less the exuberant and minute detail of such a work as the portico of the Church of Santa Maria dei Miracoli, Brescia. The orders are superposed; later on Palladio delighted more and more in one gigantic order sprawling through several stories, as in the Casa del Diavolo; and it was this, his later and inferior manner, which found most favour with his English imitators, and not the simple purity of his earlier work.

The design may be regarded as in some measure a Classical version of the neighbouring town-hall of Padua, which is a vast central hall surrounded by Gothic arcades of pointed arches, for which Palladio substituted two loggias of semi-circular arches, employing the Doric order in the lower and the Ionic in the upper loggia. Though nothing can have been further from his mind than to introduce Gothic principles into his work, yet there can be no doubt that the success of the design is largely due to the application of two leading principles of Gothic architecture, which he introduced not because he liked them, but because he was constrained to do so. One is the retention of the sky-line of the roof of the old hall—a roof so vast in scale that it might well have overwhelmed and overpowered the whole design. The other principle is the multiplicity and repetition of parts. Not only is the number of bays large, but each bay, instead of consisting of one opening, is subdivided into three—thus magnifying the apparent length of the building, quite in Gothic fashion. The triple opening of the bay—a central arch flanked by two lintelled openings—had been previously employed by Peruzzi; and may be regarded as a development of the design of the entrance of Diocletian's palace at Spalatro. Its

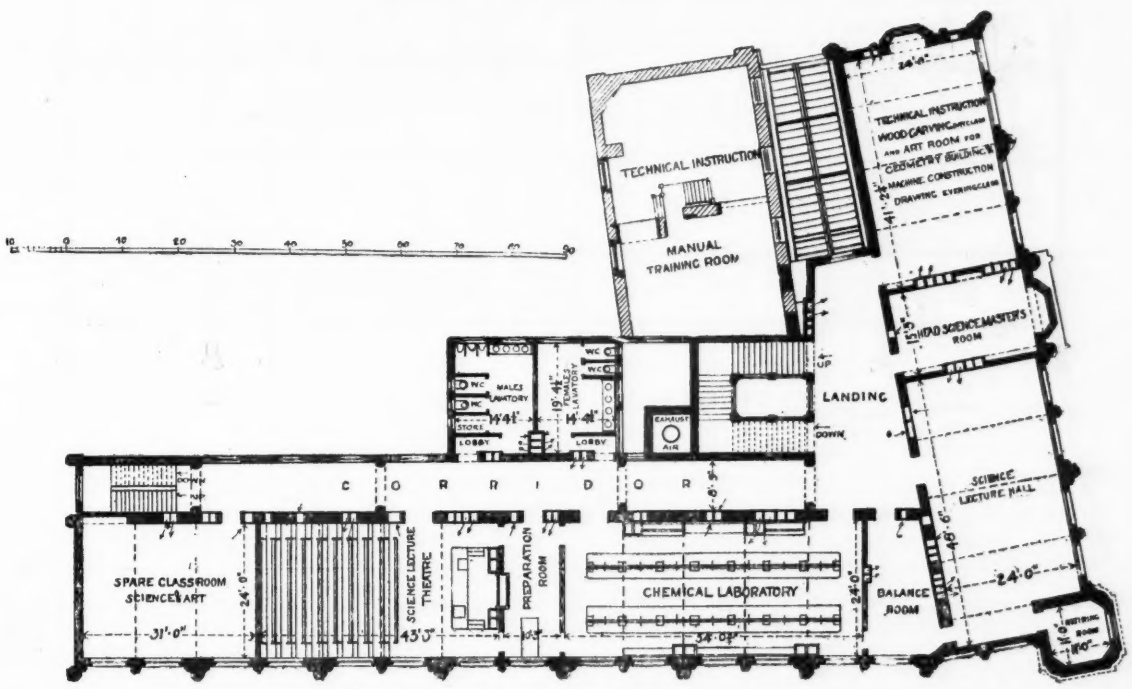


Norwich Technical School. Plans. *(See also pages 67. 68.)*

adoption was forced on Palladio by the fact that each bay of his loggia had to correspond with the openings into the hall behind. These openings are narrow. Palladio, therefore, wishing to employ semi-circular arches, made one bay of the loggia correspond to two of the openings behind. To fill in the whole broad bay of the loggia with one great arch would have resulted in an unsatisfactory excess of the voids; to build the piers solid up to the present arches would have darkened the loggia and would have made the whole design heavy and clumsy. The triple opening gives precisely the right balance of voids and solids, of strength and grace. Equally admirable is the treatment of the corner bays. These project beyond the hall, and are not restricted in dimensions by the openings of the hall. Palladio has therefore built them narrower and more solid; emphasising and strengthening the angles of the loggias in the most successful manner. Palladio was also very proud of the fact that his Basilica was in hewn stone; most of the Palladian architecture of Vicenza is in a most forlorn condition; the rusticated walls, columns and pilasters are usually of brick, and some columns of wood; and the stucco, which covers them all, is peeling off. He may well have taken the idea of his loggias from Vitruvius' description of the Roman Basilicas; or the Basilica may be regarded as a development or criticism of Sansovino's Library at Venice, which was completed about ten years earlier. Both buildings have been the object of universal admiration; the Vicenza monument, however, is architect's architecture, that at Venice sculptor's architecture; it may fairly be contended that the Basilica is superior to the Library in the same way that Beverley



SECOND FLOOR PLAN


TECHNICAL INSTRUCTION
MANUAL TRAINING ROOM
TECHNICAL INSTRUCTION WOOD CARVING AND ART ROOM FOR GEOMETRY & BUILDING CONSTRUCTION MACHINE CONSTRUCTION DRAWING EVENINGS
HEAD SCIENCE MASTER'S ROOM
LANDING
SCIENCE LECTURE HALL
C O R R I D O R
SPARE CLASSROOM SCIENCE & ART
SCIENCE LECTURE THEATRE
PREPARATION ROOM
CHEMICAL LABORATORY
BALANCE ROOM

FIRST FLOOR PLAN

Norwich Technical School. Plans.

choir has the better of Ely presbytery. "It is," says Mr. Fergusson, "the happiest adaptation of classical art to modern purposes which has yet been executed in Europe, and less open to animadversion than any design of modern times"—a verdict which no one who has seen the building will be inclined to dispute. Palladio himself had no false modesty about its merits. "I do not question," he says, "that this fabric may be compared to the ancient edifices, and be looked upon as one of the most noble and beautiful buildings erected since the time of the ancients."

S. MARIA DEI MIRACOLI, BRESCIA.

THIS church was built, pursuant to a decree of the city in 1487, in honour of the supposed miraculous painting of the Virgin which it contains. This was originally upon the wall of the house of Frederick de' Pelabroschi, and was bought, house and all, for the benefit of the city. The porch of the church is one of the masterpieces of the Early Italian Renaissance: its detail so precious in design and execution that it seems a desecration ever to have exposed it to the vicissitudes of wind and weather. It is unsurpassed by any of the work of the quattrocentists, though it has its rival in the interior of Lombardi's church of the same name at Venice. In these and in similar examples—and there are many—architectural ornament reaches the level not merely of the best Roman, but of the best Greek art. The porch consists of four columns bearing an entablature, which carries a lofty attic. On this is set a semi-circular pediment broken to admit a niche with a figure of the Virgin. The whole is covered with minute ornament of the utmost delicacy and refinement, executed with consummate skill and grace. The plan of the church also is of the utmost interest; never more so than nowadays, when the world is weary of the monotony of the basilican type of church. It may be described shortly as a cruciform inscribed in an oblong church, the short arms of the cross being covered with tunnel vaults; the foot of the cross and the crossing with large domes, the apse with a semidome; while smaller domes with lanterns roof the square corners of the oblong. If Wren had ever seen it, it might well have been thought that in S. Maria dei Miracoli, Brescia, we have the prototype of the beautiful plan of the churches which he erected, simplified however in type, at St. Stephen's, Walbrook, and St. Mary-at-Hill; and which appears again in Hawksmoor's fine church of St. Mary Woolnoth.

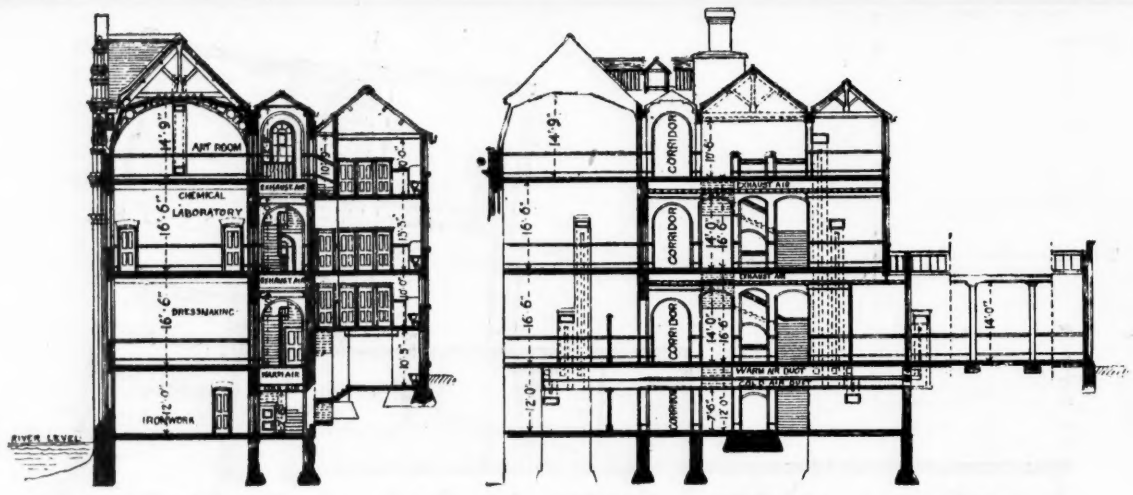
CITY OF NORWICH TECHNICAL INSTITUTE.

THIS Institute is now in course of erection by the Corporation.

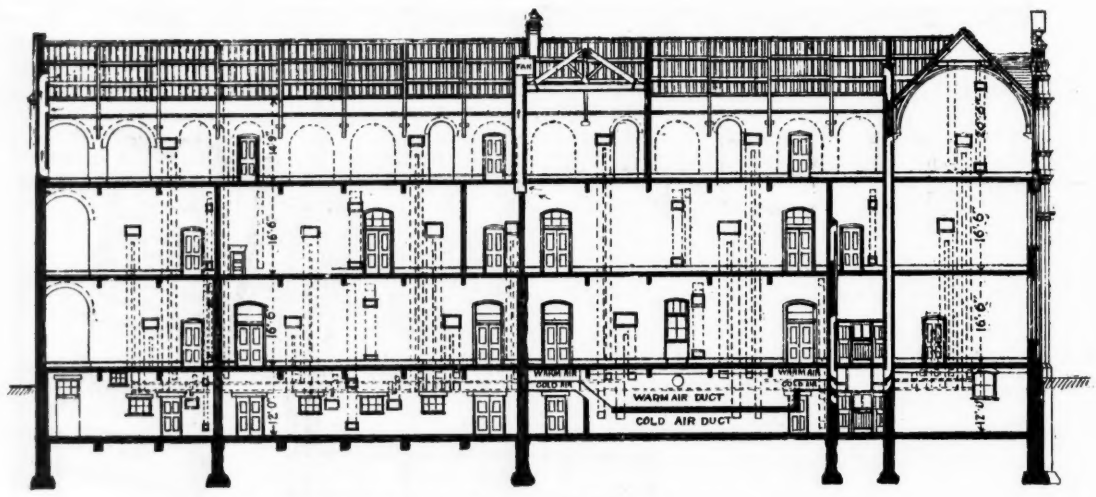
The facings of the building will be of bright red brick, the panels of kiln bottom bricks, all built in black mortar. The mouldings, &c., are to be of Cosseyware, supplied by Messrs. Gunton, of Costessey, Norwich. The portico will be built with stone supplied by Messrs. Groves, Guiting Quarries, Oxfordshire. The steps will be of Penhryn granite. The warming and ventilation will be on the Blackman plenum and exhaust system.

The whole of the floors and stairs will be of breeze concrete filled in between H-iron floor-joists, and finished with cement concrete, wood, or Val-de-Travers asphalte, as the case may be. All the windows throughout the building will be fitted on the N.A.P. Company's system. A 3-in. water main will be taken into the building and will be fitted with hydrants and hose on each floor. Compressed air for power and laboratory purposes will be supplied from the Corporation's main. Electricity, gas, and water will also be supplied.

Portions of existing buildings now on the



CROSS SECTION ON LINE AB — CROSS SECTION ON LINE CD



LONGITUDINAL SECTION ON LINE GH

Norwich Technical School. Sections.

site at the rear are being retained, and will be utilised for manual training purposes.

The estimated total cost of the building when completed will be about 22,000*l.*, exclusive of the site which is Corporation property. The Science and Art Department have lately granted a sum of 1,000*l.* towards the cost of the erection of the Institute which will necessitate alterations in the art-rooms; windows being required not less than 12 ft. wide by 11 ft. high.

The river-wall foundation was put in by Mr. Blyth, of Foulsham, some eighteen months ago at a cost of 565*l.* 11s. 6d.

The contractor for the buildings is Mr. Samuel Warburton, of Miles Platting, Manchester, the contract amount being 16,939*l.*

The whole of the work is under the supervision of Mr. Arthur E. Collins, the City Architect, assisted by Mr. W. Douglas Wiles.

We give the complete plans and sections, as they have been carefully worked out and may be of practical value to our younger readers.

NEW PARISH OFFICES, ORMSKIRK.

THE building illustrated under the above title was the subject of a competition in the end of 1897, when this design was placed first. It is designed as an addition to a workhouse already in existence, and provides accommodation for all the committee and board work of the Guardians.

It is built of Accrington brick with Rainhill stone dressings. The roofs are covered with green Westmoreland slates. The work, exclusive of fittings, has been completed at a cost of 2,500*l.*

The contractor for the work is Mr. James Spencer, of Liverpool, and the architects are Messrs. Willink & Thicknesse, of Liverpool.

VILLAGE HALL AND CLUB, BYFLEET.

THIS building, which has been recently opened, has been presented to the village by Mr. F. C. Stoop, of West Hall, Byfleet, in commemoration of the sixtieth year of her Majesty's reign.

The alterations from the competitive design have been slight, consisting chiefly of the enlargement of the stage and reversing the positions of the billiard and committee rooms. The hall, seated for 300 persons, is intended to be used for concerts, dramatic entertainments, and dancing.

The materials used in the elevations are red bricks, with half timber-work and rough-cast, the roof of the front portion being covered with tiles, and that over the hall with green slates.

The cost of the building is 2,155*l.*, and the builder is Mr. R. J. Hunt, of Chertsey; Messrs. Edwards & Son are executing the hot-water heating, Messrs. De Grelle, Houdret & Co., the wood block flooring, and Messrs. Kite & Co. the ventilation.

The architects are Messrs. Ashley & Armstrong, of London; the illustrations being taken from the competition drawings.

DESIGN FOR A GOLF CLUB HOUSE.

THIS design for a golf club house, which obtained the Architectural Association Silver Medal in 1897, was intended for links on a sloping site near the sea. Accommodation is provided for a membership of about 150 gentlemen and 50 ladies, there being a common dining-room approached from both ladies' and gentlemen's club rooms. A separate entrance on the north-east is also provided.

The material proposed to be used was local stone, the roof being covered with stone slates.

The design, which is by Mr. H. Inigo Triggs, was exhibited at the Royal Academy last year.

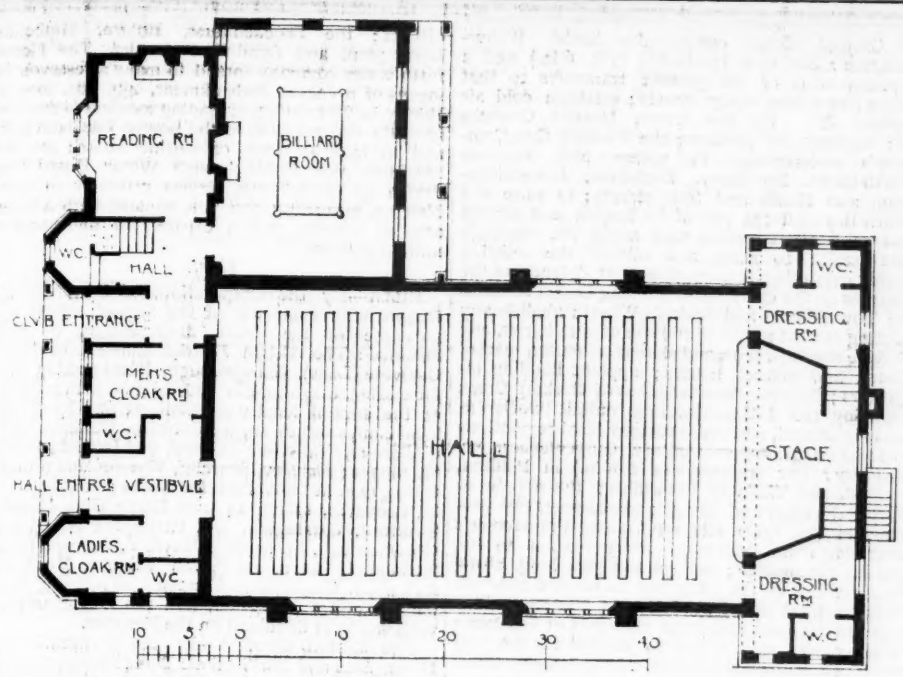
LONDON SCOTTISH GOLF CLUB HOUSE.

THIS building has been recently erected on Wimbledon Common, to take the place of the old "iron house" which had been used by the Club for many years.

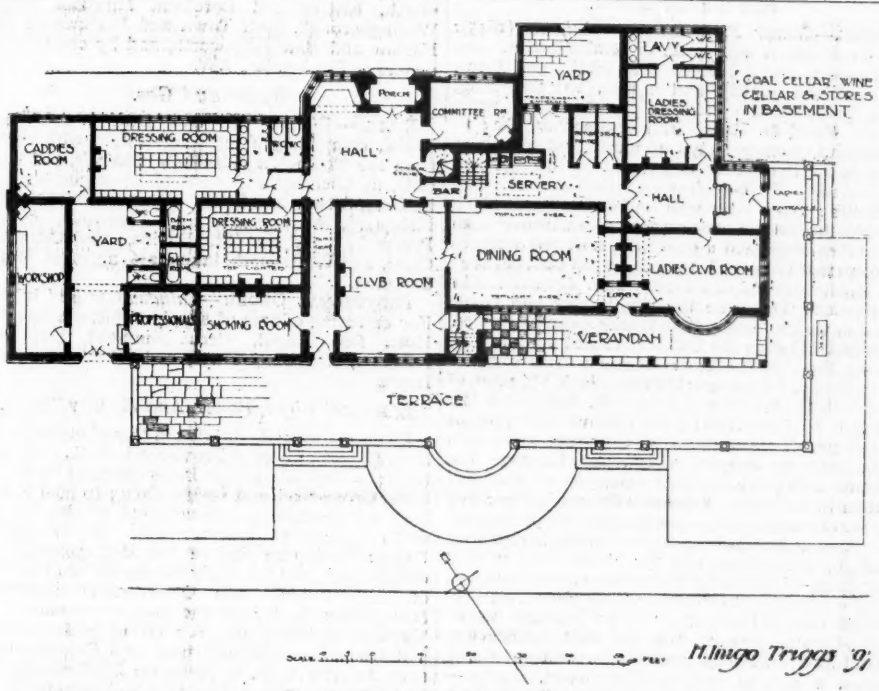
Externally the walls are covered with white rough-cast, and the roof is slated with rough green Westmoreland slates in gauged sizes. Internally the principal rooms are lined with Cowrie pine oiled and left plain, and the boxes round the dressing-rooms are of Oregon pine. On the upper floor, rooms are provided for the caretaker, and at the back are workshops for the professional, caddies' shelter, &c.

The builders were Messrs. Bugler & Co., of Putney; the ornamental plaster-work being carried out by the Veronese Plaster Company. Mr. H. O. Cresswell is the architect.

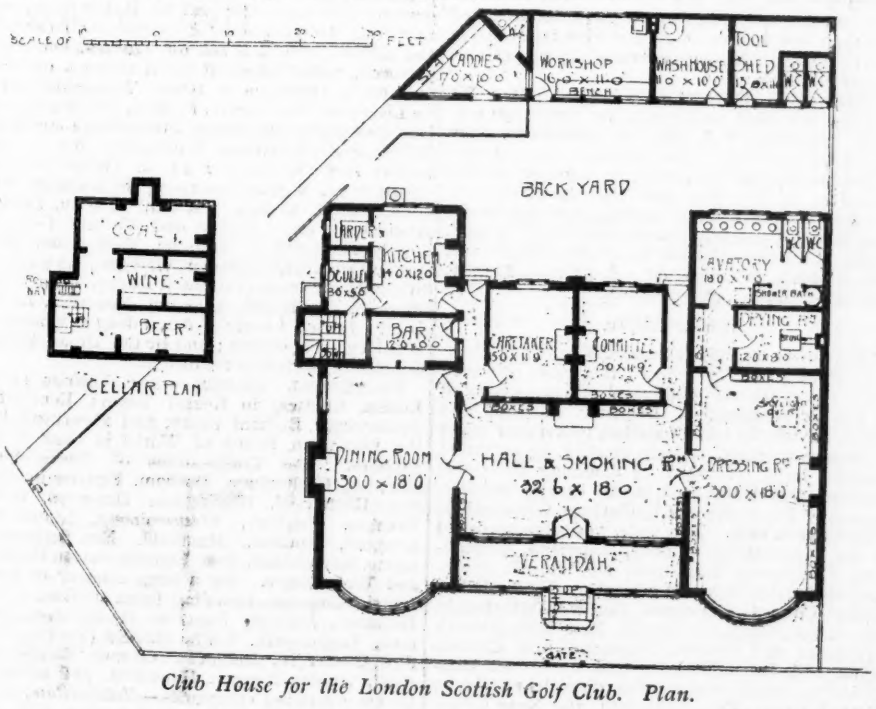
DRAWINGS OF NEW VAUXHALL BRIDGE.—In the longitudinal section of the design for the new Vauxhall Bridge, published in our issue of January 7, there was a draughtsman's error in figuring, whereby both the side and the centre spans are figured as 32·50 ft. above the datum. The figures are correct for the centre span; for the side span they should be 27·71 ft. The error, of course, was not ours.



Byfleet Village Hall. Plan.



Design for a Golf Club. Plan.



Club House for the London Scottish Golf Club. Plan.

ARCHITECTURAL SOCIETIES.

EDINBURGH ARCHITECTURAL ASSOCIATION.—At a meeting of this Association, held in the Royal Institution, Edinburgh, on the 11th inst.—Mr. Thomas Ross, the President, in the chair—a lecture on "Explorations in Palestine and Jerusalem" was delivered by Mr. A. C. Dickie, of the Dundee Institute of Architecture. The paper dealt with the recent excavation at Jerusalem carried out by the Palestine Exploration Fund, under the direction of Dr. Bliss and Mr. Dickie. Their principal work was the recovery of the southern limits of ancient Jerusalem, and the recent explorations showed, he said, that the city once extended very much further south than the present southern boundary, the addition and the area of the city amounting to over 100 acres. Almost the whole of this area is now cultivated in tiny terraces and plots, the soil having accumulated over the ancient ruins to an average depth of from 25 ft. to 30 ft., and in some places as much as 70 ft. The ancient wall encloses the whole of the western hill down to the verge of the Kedron valley across the Tyropeon, under the Pool of Siloam, on to Ophel, where it joins the wall traced by Sir Charles Warren from the south-east angle of the Temple area. Towers occur at short intervals along the wall, and three gates (two of which show three periods) were found between the Protestant cemetery and the Pool of Siloam. The discoveries illustrated in a remarkable manner the description given in the 2nd and 3rd chapter of Nehemiah of his night ride and survey of the ruined walls and subsequent apportionment of sections of the work of restoration to the different Jewish families from the "Valley Gate" to the "stairs that go down from the city of David" (3rd chap., 13-15). The lecturer also referred to the discovery of a church, baths, mosaics, and tombs, and concluded with a few notes on the mode of excavation and the difficulties to be encountered. The lecture was illustrated by drawings and lantern slides, lent by the Palestine Exploration Fund.—*Scotsman.*

THE LONDON BUILDING TRADE.

A PLASTERERS' strike which may have far-reaching consequences occurred a few days ago among the workmen employed by Messrs. Higgs & Hill, of South Lambeth-road, and Messrs. Bywater & Co., of Regent-street. The men, it appears, struck work in consequence of the refusal of the foremen in the yards to become members of the Plasterers' Union, and though the men have since found employment elsewhere, it remains to be seen whether the matter will rest there. A widespread belief appears to exist that there will be much labour trouble in the building trade in the near future, though the masters deny that they are acting in any way aggressively. They consider that a fight is being thrust upon them by the plasterers, and while they are reluctant to declare a lock-out of their members, their attitude in the matter will depend upon the men. The masters not only complain of the demand of the plasterers that foremen should join the society: they assert that the plasterers regularly "black-list" certain firms, and absolutely prohibit their members from working for those firms, though they pay the full wage. This is entirely outside the spirit of the 1896 agreement. Then, with a view to restricting the number of their competitors, they insist upon limiting the number of apprentices to one for every seven journeymen. These restrictive conditions, the masters assert, have simply become intolerable. The plasterers in 1896 agreed to give the masters notice of all strikes, but the masters complain that such notices are not received; they not unreasonably think, also, that if the men have any complaints to make they should communicate with the Master Builders' Association instead of striking—especially without notice. A meeting of the Master Builders' Association is to be held shortly, when the future policy of the masters will be decided upon. So far as the masters are concerned, the trouble has reference to the plasterers only, whose conduct they consider outrageous and intolerable.

ASSOCIATION OF MUNICIPAL AND COUNTY ENGINEERS.—The Twenty-seventh Voluntary Pass Examination for candidates for Surveyorships under Municipal Corporations and District Councils will be held at the Institution of Civil Engineers on Friday and Saturday, April 14 and 15.

PRIVATE BILLS FOR THE COMING SESSION; AND PROVISIONAL ORDERS (BOARD OF TRADE, AND LIGHT RAILWAYS COMMISSION).

THE private and other local measures for which the prescribed plans and documents have been formally deposited, after publication in the *London Gazette* of the statutory "notices," amount to 363, as compared with 332 last year. The total comprises: railways, 58; tramways, 14; provisional orders, 75; electrical lighting, &c., 114; and miscellaneous, 102. The number of schemes for water supply is noteworthy, and for three of them an ultimate expenditure of 14,000,000*l.* is contemplated by the Corporations of Leicester, Derby, and Sheffield. We give our customary summary of the principal projects other than those which have already been described in our columns.

Municipal and Other District Local Improvements with Sanitary, Building, and Similar Regulations.

BILLS.—By the Corporations of: *Blackpool*, For a carriage-drive along the promenade, and to lengthen the latter by 220 yds.; a tramway along the Queen's Drive to Gynn-road; a new street, 492 yds., from the north end of Devonshire-road to the new road; *Bootle:* To add to the number of wards, and of members of the Borough Council; by-laws to regulate electrical fittings, and the exhibition of advertisements, to produce and supply electrical energy, with further provisions in respect of streets, buildings, drains, police, sanitation, and parks and recreation grounds. *Bradford:* For tramways in North Bierley and Calverley, and adjoining districts; to supply electrical energy; improve certain streets; and acquire Baildon Moor (770 acres), setting apart about 670 acres as recreation grounds. *Bridgewater:* To improve the river Parrett navigation, construct a landing-stage and quay on its left bank between Chandos-street and the G.W. Railway bridge, cut or set back its banks, and make new cuts. *Bristol:* For works to prevent floods in the Cutlers Mill brook and its tributaries, and to make a culvert therefrom into the Back-ditch at Stratton-street. *Bury:* For tramways, an art gallery and public museum, infectious diseases hospitals, and to take over the Florence Nightingale Hospital. *Darwen:* To construct new tramways; make new streets and widen others; and to open a public park. *Leeds:* To extend and improve Kirkgate market; to erect in North-street recreation ground a building for agricultural, horticultural, and cattle-show purposes, exhibitions, and concerts; lay down tramways in the district, and purchase the Bradford and Leeds Light Railway; and regulate the traffic and public health. *Liverpool:* To widen Vauxhall, Park, and Scotland-roads; and amend the Local Act, 6 and 7 Vic., cap. 109, for the better protection of property from fire. *Loughborough:* To acquire the Loughborough Gas Company's undertaking, and to supply the borough and vicinity with gas and electricity; regulations as to buildings and streets. *Manchester:* To widen three bridges across Rochdale Canal; to acquire a site in High-street, South Manchester, for public baths and a hall; and to light all *culs-de-sac*. *Newcastle-on-Tyne:* For new tramways; a telephone service and station; and to widen certain streets. *Nottingham:* For tramways; to widen Upper Parliament-street; to establish waterworks, with a reservoir at Greasley, and an enlargement of Red Hill reservoir. *Oldham:* For tramways and to take a site for a generating station at Gas-street; a new street from Wallshaw-street to the Mumps. *Scarborough:* For an approach road to the new Marine Drive, and deviations of the sea-wall of the Drive, between the north-east end of Foreshore-road, in the South Bay, and the shore end of the harbour east pier. *Sheffield:* To purchase for 530,000*l.* from the Duke of Norfolk "the markets and fairs, and market and fair rights, in the town or parish of Sheffield." *Stockport:* To take over the tramway lines, supply electricity, provide and equip reading and refreshment rooms, &c. *Sunderland:* New tramways with a generating-station at the Dock-street site; to widen Villette and other roads; and extend the limits of their electrical lighting order, 1891, to include the urban district of Southwick. *Wakefield:* For the inclusion of Alverthorpe with parts of Outwood and Crigglestone within the city limits; further provisions as to parks and recreation-grounds; and the prohibition of the discharge of trade refuse into sewers. *Warrington:* New waterworks with reservoirs at Daresbury and Denmow by damming the Daresbury and Denmow brooks at Appleton and at Winwick; for street widenings and improvements; extension of the sanitary depot at Longford; to dedicate to the public use part of St. James's graveyard and St. James's old burial-ground; to appoint inspectors of nuisances; to make regulations as to buildings, sky-signs, and projections over streets, sanitary matters, gas-pipes, and fittings; and the provision of new waterworks. *Whitehaven:* Inclusion of parts of Moresby, Preston Quarter, Hensingham, and St. Bees within the borough; revival of powers of the Whitehaven Town and Harbour Improvement Act, 1885, for a weir across the river Ehen; and the impounding of the Ennerdale lake, and purchase of about 6 acres of Caswell Holme commonable lands. *Wolverhampton:* For new tramways (3 ft. 6 in.) and a reconstruction of the present tramways to that gauge; to widen many streets; establish cold air stores; &c. By the Urban District Councils of: *Barking*, To purchase the Barking Gas Company's undertaking; to widen and improve North-street, Broadway, Back-lane, Longbridge-road, and Heath and East streets; to raise and widen the wall 174 yds. of its length, and rebuild and raise the concrete wall along the Roding's east bank; to raise and rebuild the existing timber camp sheeting, or other river defence, of the wharves on the east bank of Barking Creek, between the Town Wharf and Sutton's Wharf; abolish any existing market rights within the urban district, and provide markets, fairs, and slaughter-houses, market places, and market houses; appoint building inspectors; improve the navigation of Barking Creek adjoining the L.C.C. sewerage outfall works at Gascoigne-road, and make various local regulations as to drainage, sewers, sanitary conveniences, &c. *Wallasey:* For tramways (4 ft. 8 in.) in Poulton, Liscard, and Wallasey townships; the supply of electrical energy and fittings; to construct two promenades (1), 1,050 yds. long, along the Mersey's west side from Seacombe Ferry Station to the present promenade; and (2) 610 yds. long, along the foreshore of the Irish Sea in Liscard between Rowson-street and New Brighton Pier; to widen many streets, and to lay out such part of the lands to be acquired as may not be wanted for the promenades and street improvements as ornamental or recreation grounds.

Docks, Harbours, Piers, Navigation, Ferries, and Similar Works.

BILLS.—*Cromer Protection Commissioners* (1845): To construct a sea wall, or embankment, and promenade along almost the whole sea boundary of the parish, and a pier, 183 yds. long, at a point on the existing promenade in front of the Hotel de Paris, with approaches, &c.; to contribute towards bands of music, and otherwise provide for the public enjoyment of the pier and promenade. *North-Eastern and Hull and Barnsley Railways:* For a river-wall and embankment along the Humber's north shore, 2,520 yds. eastwards from Alexandra Dock, and a dock with lock and entrance through that river wall, 150 yds. by 320 yds., between the Holderness and Old Fleet drains. *Aire and Calder Navigation:* To widen the Knottingley and Goole canal in various sections, and make a canal entrance, with lock between the Dutch river and the canal at Goole. *Maryport Harbour:* Transfer of the undertaking to a new company; to make a dock, 7¾ acres, at Elizabeth Dock, and a pier, 600 yds. long, from the sea-wall at King-street; to remove the present North and Tongue piers, to construct some railways, and to deepen, widen, and improve the channel and harbour, with extension of the port and harbour limits. *Yarmouth Britannia Pier:* For the purchase by another company of the present undertaking and to build on the site a new pier, of open work, to extend sea-wards 270 yds. from the existing pier gates.—For a ferry for vehicles and passengers, to be worked by electricity or other power, on submerged rails, between the "Ship" hotel, at Brewhouse-lane, Greenwich, and the west boundary of Island-gardens, Poplar, and to take for a generating station 1 acre of land at Wharf-road, Poplar.—To set up a conservancy for Milton Creek, Kent, and part of the Swale, between Milton Creek and King's Ferry Bridge, with powers to provide for maintaining the purity and freedom from pollution of the waters. *Fishguard and Rosslare Railways and Harbours:* For harbour works at Fishguard, and a wharf wall or embankment for reclaiming portions of the fore-shore.

PROVISIONAL ORDERS. — *Blackpool Pier:* To lengthen the pier, westwards, by about 250 yds. *Coast Development:* A pier at Felixstowe, with approaches, pavilions, concert-rooms, &c.; a pier at Southwold, 270 yds., with constitution of the promoters as the Pier and Harbour Authority. *Devonport Corporation:* A landing pier and works from Saltash Passage and terminating in the Tamar. A pier at Fleetwood, from the Fielden Esplanade, with saloons, pavilions, &c. A promenade pier, with pier-head, &c., at Lynmouth.

Water Supply.

The number of Bills is unusually large: of those that relate to the provinces the most extensive undertakings are the great rival schemes proposed by the Corporations of Leicester, Sheffield, and Derby, for which, taken together, powers are asked to borrow fourteen millions sterling, to construct nineteen large reservoirs by damming the rivers Derwent and Ashop, and, in the case of Sheffield, to supply Doncaster and Rotherham Corporations with water in bulk. New waterworks are projected by the Corporations of Bury, Falmouth, Glastonbury, Godalming, Maidstone, Rawtenstall, Southampton, Stockport, and Workington. By the Urban District Councils of Bognor, Burley-in-Wharfedale, Clay Cross, Goole, Horsforth, New Mills (Derby), Newhaven and Seaford, Nuneaton and Chilvers Coton and Otley (Yorks.); and by various companies to supply (with other districts) Wetherby (Yorks.), Herne Bay, Yarmouth, the Nene Valley, the Mayfield, Rotherfield, Wadhurst, and Frant districts; the Bedford, Sandy, and Biggleswade district; the Brockenhurst, Boldre, Highcliffe' Lymington, and Lyndhurst district. The Horseforth water company intend to make a reservoir by means of a curved embankment, 455 yds. long, in Burley-in-Wharfedale, extending westwards 167 yds. from the embankment of the Lower Lansham dam, and to take 41 acres of Burley Moor; and the Stockton and Middlesbrough Water Board have drawn up plans for a service reservoir in Long Newton, measuring 390 yds. square, with a water area of 30 acres, and a capacity of one hundred million gallons.

Gas.

BILLS.—By the Corporations of *Dorchester* and *Reigate*, with extension of the area of supply, and purchase of the local undertakings, in each instance: The Urban District Councils of Brigg, Coalville (Leic.), Gainsborough, Ilford (taking 11 a. for works), Leigh-on-Sea, and Skipton, with purchase of the several local undertakings; and by various local companies to supply Cobham, Ockham, Stoke d'Abernon, Walton-on-Thames, and Byfleet; Ilford; St. Albans; Pleasley, Scarcliff, Warsop, and around, taking 12 a. at Shirebrook for works; Hastings and St. Leonards, taking 14 a. at Glyne Gap, Bexhill; Stretford, Carrington, and Partington (Cheshire); Crowborough, Rotherfield, Mayfield, Buxtead, Frant, Speldhurst, &c.; and Sutton Valence, Headcorn, Aylesford, Staplehurst, Pembury, Wrotham, Ightham, Malling, Meopham, and the neighbourhood, with works at Snodland on the Medway.

PROVISIONAL ORDERS.—By the Corporations of *Wokingham* and *Wallingford:* These two applications will be made to the Local Government Board; the Urban District Councils of Ashburton and Kirkby Lonsdale; and by the local gas companies of Bedworth, Elstree and Boreham, Farnham, Brigg, Wellingborough, York Town and Blackwater, and Harlow and Sawbridgeworth, and by certain promoters in Freshwater, I.W.

Water and Gas.

BILLS.—*Woking Gas and Water*: Additional works, comprising a pumping-station with intake from the Thames, a subsidiary reservoir, and filter beds, at Chertsey, and wells and pumping-stations in Shere, Albury, and Stoke. By new companies for Fishguard, Manorowen, and Llanwnda, county Pembroke; and for St. Davids, the Cathedral Close, and Whitchurch, taking 2½ acres of Morfa Common.

PROVISIONAL ORDER.—*Laindon Gas and Water*: For extension of area of supply to include Laindon Hills, Lee Chapel, Great Burstead, Billericay, Basildon, Ramsden, Crays, and Wickford, county Essex.

Electrical Light, Power, and Energy Supply.

BILLS.—*Central E. Supply:* A tunnel or waterway from Regent's Canal at Grove-road, N.W., to North-bank; a dock or basin on lands bounded by North-bank, Grove-road, and Lodge-place; to take North-bank for generating stations; and to stop up the south portion of Oaktree-road. *St. Marylebone Vestry:* To acquire part of the Metropolitan E. S. undertaking, and to supply the parish and the parts of Edgware-road and Oxford-street adjoining. *Metropolitan E. S.:* In the City of London. *St. James's and Pall Mall E. L.:* To buy lands and erect stations on the Marshall-street and Carnaby-street sites, about 3 roods, stopping up Marlborough-row and passage. *Kensington and Knightsbridge E. L., and Notting Hill E. L.:* To acquire lands for stations in Hammersmith, Brompton-road (Chapel-place site), and Bulmer-place, High-street, Victoria-gardens and Lancaster and St. Mark's roads, Notting Hill. *Corporation of Birmingham:* To acquire the Birmingham E. S. Ld. for 420,000*l.*, borrowing 500,000*l.*, and allotting all profit above 5 per cent. towards a reduction of rates. *Lancashire E. P.:* In Liverpool, Manchester, Preston, Burnley, Bolton, Blackburn, Oldham, Ashton, Staleybridge, Rochdale, Wigan, Salford, Darwen, Warrington, &c. *S. Lancashire and Cheshire E.:* In St. Helens, Widnes, Warrington, Wigan, Liverpool, Birkenhead, Runcorn, Eccles, Bolton, Horwich, Chorley, Prescot, Altrincham, &c. *Walker and Wallsend Gas:* To supply electricity in Wallsend, Walker, and Withington Quay, with station at Wallsend. A company to supply Leicester, Coventry, Rugby, Leamington, Warwick, Tamworth, Coleshill, Nuneaton, Lutterworth, Derby, Lichfield, &c., taking 35½ acres in Hinckley for a station; and by the Urban District Council of Gorton, in the district.

PROVISIONAL ORDERS. — The Vestries of St. Luke's, Chelsea, in Kensal Town; Kensington, Bermondsey, Bethnal Green, and Plumstead; and the Lewisham Board of Works in their several parishes. The Corporations of Bournemouth, Burslem, Cheltenham, Durham, Eastbourne, Glossop, Hartlepool, Haslingden, Heywood, Hythe, Ilkeston, Keighley, Kidderminster, Leamington, Longton, Ludlow, Mansfield, Newcastle-under-Lyme, Rawtenstall, East Retford, Sutton Coldfield, and Wednesbury. By a large number of Urban District Councils, including those of East Barnet, Horsham, Ashford, Runcorn, Stourbridge, Brentford, Teignmouth, Erith, Mirfield (Yorks.), Romford, Castleford, Dukinfield, Cromer, Farnborough, Rhyl, Rugby, Bognor, Knutsford, and Aylesbury. By the following companies.—*Metropolitan:* In the City of London. *County of London and Brush Provincial:* In Bermondsey, Rotherhithe, Deptford,

Lambeth, Lewisham and Lee, Battersea, Fulham, Stoke Newington, Hackney, Bethnal Green, Poplar, and Whitechapel. *Charing Cross and Strand:* In the City of London. *Smithfield Markets:* In the City, St. Luke's, and the district of the Holborn District Board of Works. *Blackheath and Greenwich:* In Lee, Charlton, Eltham, and Kidbrook; and by numerous other companies in the suburbs and provinces.*

Correspondence.

To the Editor of THE BUILDER.

THE NEW VAUXHALL BRIDGE.

SIR,—After examining the design published in your issue of the 7th inst., I wonder at the mildness of your "Note" of the 14th inst. relative to the artistic qualities, or rather the violation of all artistic sense, displayed in that design.

It is nothing less than a public scandal that any river should be disfigured by such an erection, and it is all the more grievous that this river should be one of which the people may justly be proud.

Granted that it is desirable or necessary to cover a concrete bridge with a skin of granite, there is hardly an architectural feature in this design but is inserted in such a way as traverses all ideas of proportion, fitness, or beauty, and such a combination of misapplied features is probably inconceivable to any one but—an engineer. Some months ago I noticed in the daily papers that on this important work (for from the public point of view it is important in the sense that it is costly) the County Council determined to spend a small sum, about 200*l.* I think, in obtaining the service of an architectural draughtsman to make a perspective view and assist with the details, and this is the result. During this week the students' work is on view at the Institute, and I am confident there is a higher level of ability to detail structures exhibited in the work there than is to be found in any part of this bridge design, composed of details that may be found in any second-rate text-book, applied without regard to scale, suitability of purpose, or any adequate sense of what bridge design should be. The main cornice of the bridge (and such a section of a cornice) forms the capital to the short column which performs the colossal duty of supporting a lamp-post of the proportions of the funnel of one of the river steamboats. What can be said for or to a public body whose idea of adequately dealing with the design for a great bridge is to employ an architectural draughtsman to help with the details and draw a perspective?

That act was in itself a confession of failure in design; evidently the engineer had not risen to the occasion in such a trifling matter as putting respectable garments on this bridge, and so he was to be helped by one who put in such cornices, caps and bases, and balustrades as we now see.

I venture to hazard the opinion that in no other European country would such an attitude be taken up by a public body, or could cultured men hoodwink themselves into believing that they had done their duty in the business entrusted to them.

You state in your note "that some protest should be made while there is time," and I agree with you, although I am more than doubtful of the effect of any protest.

The facts are all against us; here we have a public body with authority to build this bridge, we *only* pay for it, and their idea of bridge designing consists in handing it over to an engineer whose time is, no doubt, fully occupied by main drains and tunnels, and such like engineering works quite proper to his sphere. He does his best, and then the "trimmings" are put on by the artist who does the perspective. How I wish we had got the engineer's first hard matter-of-fact design; anything would have been preferable to this.

Perhaps, some day the County Council will realise that "if this bridge is allowed to be carried out as designed it will be a laughing-stock to foreign visitors who know anything of architecture," and I may add it will be a laughing-stock to many who are neither foreign nor visitors.

J. S. GIBSON.

* We will give the railway tramway, &c., bills and provisional orders next week.

PREMIATED DESIGN FOR A TOWN CHURCH.

SIR,—As a layman who has had over thirty years' practice in securing the seating to its fullest capacity of a domed building with nave and aisles, please allow me to offer some remarks on the plan of a town church in your issue of the 14th inst.

You may place people in seats which do not command a view of the choir, but they will not remain in them even when the service is musical and consists of choruses, much less will they in any case sit with their faces "dead on" to a pier or wall. In this church it would be found that the dome-area and nave alone could be counted on for seating; a large proportion of seats, the eastward view from which is obstructed by the dome-piers, would have to be excluded. It must be accepted by any one requiring a church with large-domed area that the aisle area is useful only as an ambulatory and as affording relief in case of panic.

In the plan before me this possibility of panic is seemingly ignored—the seating is carried from chancel-crossing to west wall without a break, so that in filling in the seats any excess from the centre would have to leave the nave and go through the vestibule in order to reach the aisles. I think the south-west corner of the plan shows that a western gangway has been absorbed, and its aid with that of loose chairs in the nave and aisles called in to obtain an approximation to the stipulated 800 seats.

All honour to the architect for his design, but this church (unless pew-rented) should count as one for 600 seats—the extra area required is the price of the luxury of features which Wren protested against while providing them at St. Paul's.

C. H. H.

*** Our correspondent's criticism is quite correct, and we would recommend it to the attention of the author of the design, if he ever has the opportunity of putting his idea into practical form.—ED.

THE BAR-GATE, SOUTHAMPTON.

SIR,—My attention has been called to your issue of the 7th inst., where you say:—

"If, as is reported, the Mayor of Southampton wishes to remove the old Bar-Gate," &c.

I should be obliged if you would correct the impression your paragraph is likely to convey.

Personally I should throw every obstacle in the way of removing a single stone of the Bar, and consider its demolition would be a gross act of vandalism.

G. W. E. HUSSEY, Mayor.

*** It was a daily newspaper which threw the blame on the Mayor; we are not responsible for the statement, and are very glad to see it contradicted. —ED.

CLEANING OLD BRICKWORK.

SIR,—Will any of your readers give me their experience as to the best means of removing paint and whitewash from the face of exterior red brickwork to restore it to its original colour?

H. W.

BOOKS RECEIVED.

THE YEAR'S ART: 1899. Compiled by A. C. R. Carter (Virtue & Co.).

THE TEMPLE OF MUT IN ASHER. By Margaret Benson and Janet Gourlay (John Murray).

SCOTTISH WOODWORK OF THE SIXTEENTH AND SEVENTEENTH CENTURIES. Measured and Drawn by J. W. Small (Bernard Quaritch).

THE TESTING OF MATERIALS OF CONSTRUCTION. —By W. Cawthorne Unwin. Second edition (Longmans & Co.).

JOURNAL OF THE SANITARY INSTITUTE (published quarterly). Vol. XIX. Part 4. (E. Stanford).

RECORDS OF BLANCHMINSTER'S CHARITY IN THE PARISH OF STRATTON, CORNWALL. Compiled by R. W. Goulding (Louth: J. W. Goulding).

CITY OF LONDON COLLEGE.—We are informed that during the ten years, 1889-98, over 1,200 students have attended the Building Construction Classes at the City of London College under Professor Henry Adams, and nearly one half have sat for the Science and Art Department Examination, with a resulting success averaging 50·28 per cent. in the Elementary Stage, 91·32 per cent. in the Advanced Stage, and 28·57 per cent. in the Honours Stage. This is certainly a remarkable testimony to the efficiency of the instruction given.

PUBLIC WORKS, ST. ANNES, LANCASHIRE.—On the 11th inst., Colonel Luard, R.E., held an inquiry at St. Annes into the application of the Urban Council to borrow the following sums:—4,000*l.* for the erection of a fire station, slaughter-houses, mortuary, and town's depot; 3,500*l.* for the erection of a refuse destructor; 1,530*l.* for a sewer in Clifton-drive South; and 350*l.* for the purchase of a fire station. The town's depot was first taken, and the Surveyor (Mr. G. Hodgkinson) explained the plans. The Clerk stated that the slaughter-houses were supplemental to the private ones, but it was hoped the butchers would take advantage of the new abattoirs. In regard to the refuse destructor, Mr. Warner, of Messrs. Goddard, Massey, & Warner, the makers, stated that it would be a high temperature destructor, equal to 2,000 deg. Mr. Bancroft, C.E., explained the plans.

The Student's Column.

III.—THE SITE.

THE importance of a site which possesses healthy conditions is, of course, apparent, for no amount of care in the construction of a building will avail if the situation of the house itself is unhealthy. In many cases, of course, the architect is not consulted, for it is obvious that in towns and many other places the building must be placed in some particular spot, whether it be at the top or bottom of a hill, &c. Selection is not possible in such cases, but the best must be made of the unavoidable circumstances of each case.

However, in the country, with an unlimited number of positions available, it is one of the first duties of the architect to select a site which shall be healthy.

This selection must depend on the variety of known circumstances, each of which should be carefully weighed. One of the greatest factors is the climate, which includes the consideration of temperature, rainfall, moisture of soil, and the nature and prevalence of winds. The healthiness of the external air depends largely on the openness of the site, the condition and nature of subsoil, including the vegetation and sources of contamination in the immediate vicinity.

Now, as has been pointed out, while the architect cannot alter those general climatic conditions of a country which are due to its position on the globe, and the vicinity of seas or continents, yet he may modify the conditions and temperature of the soil and diminish the atmospheric damp by drainage, and he may alter the moisture and temperature of the air by planting or removing trees. He may thus produce changes in the immediate surroundings of a locality.

All authorities agree that the condition which principally governs the healthiness of a soil is the relation which the *ground air* (*i.e.*, air in the soil) bears to the ground water.

The moisture in the soil (*i.e.*, ground water) depends mainly upon the amount of rainfall, which varies in different parts of the country.

The principal evil to guard against is the damp caused by the evaporation of the moisture in the soil, and this is bound to arise unless the level of the ground water is kept sufficiently below the surface of the ground, for the lower the water is in the soil, the less the evaporation and the warmer the adjacent air.

Now this evaporation lowers the temperature of the air surrounding the building and is therefore injurious. To remedy this, what is known as subsoil or underdraining is resorted to; which, by facilitating the passage of the water from the surface into the ground beneath, reduces the amount of the evaporation. Many diseases appear to be derived from dampness, amongst which may be mentioned phthisis (consumption); so that it is evident great care must be taken to keep down the ground damp by under-draining. Dampness of soil is also favourable to all affections of the respiratory system such as bronchitis and pneumonia (including measles and whooping-cough), while it is generally admitted that damp and cold soils are conducive to rheumatism, neuralgia, and catarrhs.

This under-draining is effected by means of unglazed agricultural drain-pipes, butted against each other, and placed about 3 ft. 6 in. below the ground with a fall to a stream or river, so that the ground water cannot rise higher than 3 ft. 6 in. below the surface of the ground. Some authorities hold that ground water should not be allowed higher than 5 ft., but this appears excessive. The lines of pipes are placed from 3 ft. to 6 ft. apart, according to the nature of the soil, and are not jointed in any way. In free open soils, such as sand, a single drain will lower the ground water for a large area, whereas, in a stiff clay soil numerous drains are necessary. These drains, it need hardly be said, should be entirely independent of any drains used for carrying sewage. Drained and undrained sites have been tested by various authorities, and Sir Douglas Galton found that a drained field would have a temperature as much as 6 deg. or 7 deg. Fahr. higher than an adjacent undrained field, for the following reason, viz., that to convert water into vapour 960 deg. (Fahr.) of heat is absorbed from its vicinity—thus, each cubic foot of water evaporated lowers the temperature of about 3,000,000 cubic feet of air 1 deg.

Dr. Parkes has prepared tables giving his

opinion of the various soils used for building purposes in their order of fitness, to which the student is referred. We must here content ourselves with a few notes on the more ordinary soils :—

1. *Clay Soils* are generally regarded as bad, because they are impervious, hold the surface water, and are, unless carefully drained, damp, and give off unwholesome vapours in dry weather. However, houses have to be built on clay soils, and, provided they are properly drained, they can be made at least unobjectionable, although clay, being a good conductor, is always comparatively cold.

Porous soils are, however, often objectionable, because there may be an impervious stratum beneath which holds the water as in a basin, hence the term "London basin."

2. *Gravel*, free from loam and with a pervious subsoil, is generally considered the best for building purposes, as it permits of the surface water rapidly draining away, and also of a good circulation of ground air varying with the atmospheric pressure.

3. *Marshy Soils*, including muddy seabeaches or river banks, are unhealthy and hazardous to health, and statistics show that they are often responsible for malarial and other affections.

4. *Made Ground*, *i.e.*, ground which has been used as a dust and refuse shoot, and frequently found on the outskirts of towns and in the suburbs is, of course, bad and unhealthy to build upon.

5. *Chalk* is generally considered to be healthy if permeable and free from clay, but many chalks are impermeable and therefore damp and cold.

Having touched on the various soils, it remains just to treat of the *position* of the site, having regard to health. Sir Douglas Galton states that :—

1. Ground at the foot of a slope or in deep valleys which receives drainage from higher levels should be avoided, as it predisposes its occupants, even in temperate climates, to epidemic diseases.

2. High positions exposed to winds blowing over low marshy ground, although some distance away, are in certain climates unsafe, because of the liability to fevers. Indeed, Galton states that a site near a marsh, especially if protected by a screen of wood, is often safer than an elevated position to leeward and some distance off.

In advising a client as to the *suitability of a site for building purposes*, the architect should bear in mind the following points, which have been put in tabulated form for ease of reference :—

1. The local climate should be healthy.

2. The soil should be dry and porous.

3. The ground should fall in all directions to facilitate drainage. If possible a position on a steep slope should be avoided, as high ground near a building stagnates the air. This was proved very conclusively in the soldiers' huts at Balaclava. In those which were placed near a steep slope of earth, a much higher mortality occurred, compared with huts standing free.

4. There should be a free circulation of air in the district, and muddy creeks and ditches, undrained or marshy ground, should not be close to the house, or so that prevailing winds would blow the damp exhalations over the site.

5. The site, if exposed, should be protected from the north and east by the shelter of trees, &c., at a sufficient distance however, not to cause stagnation of air or dampness. A general rule is that trees should not be nearer to a house than their own height.

6. The healthiness may be further tested by the rate of mortality of the district ; although, if a health-resort, notice should be taken of its disease-curing properties.

7. The architect would be also careful to avoid the proximity of such unpleasant places as a sewage farm or soap works, brick kilns, cement works, and lime kilns (which emit carbonic acid, &c.), slaughter houses, refuse depôts, and stagnant ponds, all of which are unpleasant and unhealthy, and a cemetery also has a very depressing effect on many people, and according to Dr. Whitelegge there is evidence of increased sickness and mortality among persons residing close to crowded graveyards, the air of which contains an excess of carbonic acid.

Public houses and schools are noisy, and often have a bad effect on the nerves of delicate people.

8. Lastly, the architect should ascertain the condition of the drainage in the district, whether it is on modern principles, with good fall, properly ventilated ; with no back flow from high tides ; and also obtain particulars of the outflow and the treatment of the sewage. If in the country, and there is no main drainage, a cesspool must be used ; note if there is a convenient position for this, sufficiently far from the water supply.

The site being selected, it must, further, be properly drained, if necessary, by agricultural drain-pipes, as indicated previously, so as to keep the sub-soil water below 3 ft. 6 in. from the surface. In the majority of cases, the site occupied by the building should also be covered with 6 in. of Portland cement concrete, with 1 in. cement-floated surface ; this is necessary in order to keep down the ground air which is charged with carbonic acid and other impurities which the water tends to force up. The model By-Laws of the Local Government Board provide for this, and it has been demonstrated that families have often been more or less poisoned by vapours drawn through the ground by the warm air into the interiors of houses and cottages.

GENERAL BUILDING NEWS

THE PROPOSED ENLARGEMENT OF WAKEFIELD CATHEDRAL.—On the 13th inst., Dr. Tristram, Q.C., Chancellor for the diocese of Wakefield, held an inquiry at Wakefield Cathedral, with reference to a petition from the vicar and churchwardens for a faculty to alter and enlarge the Cathedral, as a memorial to the late Rev. Dr. Walsham How, first Bishop of the diocese. It was stated that the proposed alterations and additions are estimated to cost from 20,700*l.* to 25,000*l.* The alterations will include new vestries, chapter house, &c., and will increase the sitting accommodation from 1,400 to 1,800. The plans were prepared by the late Mr. Pearson, R.A., of London, an estimate of the first section of the work has been obtained, and when a faculty has been secured building operations will be commenced. Mr. Frank L. Pearson, architect, London, produced the plans prepared by his late father, and fully explained the work it is intended to carry out ; Mr. Harold Watson, architect and surveyor, Wakefield, submitted a plan of the graves which will be interfered with by the enlargement of the sacred edifice ; and the Ven. Archdeacon Donne, the Vicar, said the Cathedral was not at present convenient for ordinations and other episcopal functions, and it was therefore proposed to make it more efficient as a diocesan centre. The Chancellor decreed, subject to the insertion in faculty of clauses protecting the rights of certain interested parties.

PRESBYTERIAN CHURCH AND HALL FOR LEEDS.—The Trinity Presbyterian Church of England, with school hall, Leeds, is to be placed at the junction of Harehills-avenue and Avenue-hill. The hall has already been built, and it was opened on the 8th inst. The dimensions of the hall are 43 ft. by 26 ft. 6 in., and there is seating accommodation for about 250 people. Wood blocks are used for the floor, and there is a marble mosaic work in the entrance. The church will front to Harehills-avenue, but there will be an additional entrance from Avenue-hill. The building will have a tower and spire at the junction of the two roads. The church will be about 67 ft. long by 37 ft. wide, and there will be seats for about 500 people. It is proposed to place the session-house and other rooms between the church and school. These will have a separate entrance. The carrying out of the whole scheme will cost about 7,000*l.* The following were the contractors for the school-hall, viz. :—Masons' work, Mr. A. W. Hargreaves ; joiner, Mr. B. Mawson ; slaters, Messrs. Watson & Worsnop ; plumber, Mr. T. Barrand ; leaded lights, Messrs. Talbot & Co. ; plasterer, Mr. S. Macfarlane ; painters, Messrs. Wales & Son ; wood-block floors and mosaic, Messrs. Geary, Walker, & Co. ; ventilation and roof work, Messrs. Ewart & Son and Messrs. D. Crossley & Son ; and Messrs. Alf. Dougill & Co. fitted up the heating apparatus. The architect is Mr. W. H. Beever.

METHODIST CHURCH, BALLYNAFEIGH, NEAR BELFAST.—The new Methodist church at Ballynafeigh was dedicated on the 12th inst. The new church occupies a position on the Ormeau-road, opposite St. Jude's. The seating has been arranged on the circular system, the pulpit forming the centre. The builders are Messrs. Young & Dickson, and the architects Messrs. Foreman & Aston, Belfast.

SCHOOL FOR BLIND, WAVERTREE, LIVERPOOL.—The new School for Blind Children, which has been erected at Church-road, Wavertree, was opened on the 12th inst. The architects were Messrs. H. & A. P. Fry, of Liverpool, and the work was carried out by the following tradesmen, Messrs. Morrison & Sons, of Wavertree, being the general contractors, and Mr. William Hughes, clerk of works :—Ironfounders, Guy & Hunter ; plumbers, A. C. Wilby & Son ; glazing, Williams & Watson ; heating and hot-water service, Killick & Cochran ; gas service and fittings, the Liverpool Gas-fittings Company ; electric bells, telephones, and lightning conductor, H. G. Riddell ; roof ventilators, Braby & Co. ; service lifts, Waygood & Co. ; locks, College & Bridgen ; grates and chimney-pieces, Yates, Heywood, & Co. ; wrought-iron work, Cunliffe & Dean ; trough closets, Doulton & Co. Some particulars of the new building were given in our issue for December 3.

BOARD SCHOOL, HASTINGS.—On the 9th inst. the new girls and infants' department, erected in Priory-road, Hastings, was opened by the Chairman of the Board. The Boys' Department was opened in 1891, and the building opened on the 9th inst. provides for 216 girls and 208 infants. The infants are accommodated on the ground floor, which consists of a marching hall, school-room for 110, with senior class-room and babies'-room, having a south aspect, with cloak-room, &c. The girls' rooms are on the first floor, reached by a stone staircase, and consist of a central hall, and four class-rooms opening out of the hall, with cloak-room, &c. The total cost was about 6,500*l.* The architect was Mr. F. H. Humphreys.

ST. PETER'S NATIONAL SCHOOLS, IPSWICH.—The new class-rooms, built in connexion with the St. Peter's National Schools, in commemoration of the Queen's Diamond Jubilee, were opened recently. One end of the long (boys') room has been cut, and a girls' class-room, about 20 ft. square, constructed. An old lean-to building has been removed, and a class-room for boys, 24 ft. by 12 ft., provided, the old room used by the boys being converted into a cloak-room and lavatory. A new boys' entrance has been provided, and on the left of this is a room which can be divided by a screen. This is also about 20 ft. square. The architect was Mr. Frank Brown. The contractor was Mr. William Grayston.

ADDITIONS TO CARDIFF WORKHOUSE.—A new infants' block has been erected in connexion with Cardiff workhouse. The new premises will provide accommodation for thirty-eight infants. They were erected at a cost of 1,870*l.*, the contractor being Mr. Joseph Thomas, and the architect Mr. Seward.

CWMBRAN POLICE STATION.—A new police station and Court-house at Cwmbran have just been opened. The building has been erected from the designs of Mr. Tanner, Surveyor to the Monmouthshire County Council. It is of red brick, with white stone dressings.

A BRANCH SCHOOL OF ART, BIRMINGHAM.—An inquiry was held at the Council House, Birmingham, on the 11th inst., by Mr. H. P. Boulnois, one of the Inspectors of the Local Government Board, into an application made to the Board by the City Council for sanction to borrow 10,000*l.* for the provision of a branch school of art. The architect of the proposed building is Mr. W. H. Bidlake.

BUSINESS PREMISES, LINCOLN.—New bakery premises for Messrs. Whitton & Son have been erected in Lincoln. The architect of the premises is Mr. J. T. Drury, the contractor Mr. C. Robinson, both of Lincoln.

NEW BUILDINGS, DEANSGATE, MANCHESTER.—In Deansgate a plot of land, having streets on three sides, has recently been purchased for the erection of new buildings, partly by the City Missions Board and partly by the Manchester and Salford District Provident Society. The architect for the former and larger building is Mr. Lord, and for the latter Mr. Charles Heathcote. The architects have arranged, as far as rights of light will allow, to erect the two buildings in harmony, and intend using for each building granite base, stone ground floor and upper portions in terra-cotta.

HOTEL, OLD KENT-ROAD, S.E.—The new Thomas à Becket Hotel, in the Old Kent-road, is situated at the corner of Albany-road. The architect was Mr. Richard Willock, of Finsbury-pavement, and the builders were Messrs. Patman & Fotheringham, of Islington.

PRESBYTERIAN MANSE, MINTERBURN, BELFAST.—On the 12th inst. the foundation-stones were laid at Minterburn, County Tyrone, in connexion with the erection of a new Presbyterian manse. The contractor is Mr. Andrew M'Master, Belfast, and the architects are Messrs. Young & M'Kenzie, of Belfast.

BUILDING TRADE, PLYMOUTH.—The rapid growth in the number of houses in Plymouth during 1898 is again, says the *Western Morning News*, one of the most striking features in the year's history of the borough. The spread of bricks and mortar has gone on in every possible direction, and, taking a prospective view, the increase of dwellings during the ensuing twelve months, and for some time after that, seems likely to continue at the same high rate. Thus old landmarks and "country residences" are in all directions being swept away, and in a few years' time those who take an interest in the history of the borough will be reproaching the Municipal Authorities for not having, by the use of photography, preserved some of the more interesting pictures of old Plymouth. With an estimated population of 99,883, against 98,349 at the end of December, 1897, the marvel still is—where are the people to come from to occupy all the houses which have been erected during 1898 and which are in course of erection ? The number built has averaged more than one house per day (excluding Sundays), or a total of about 330. This is a considerable advance on the numbers for previous years. Plans have been deposited in the Borough Surveyor's department for the development of a number of estates,

and most of these have yet to be carried out. The majority of houses built during the year have been those whose rentals vary from 20*l.* to 30*l.* These are said to be the best-paying class of property in Plymouth. It is to be hoped that as these increase the number of instances in which houses built to accommodate only one family are occupied by two or more families will become less.

BUILDING IN DEVONPORT. — At no previous period in the history of Devonport has there been so much activity in the building trade as during the last twelve months. With better facilities than formerly prevailed for acquiring land from the manor authorities, houses have sprung up rapidly on the north-eastern frontier of the borough, as the boundary was defined before Devonport extended its borders by taking in portions of St. Budeaux and Pennycross, whilst in the added area building operations are equally in evidence. Within the borough as it existed prior to the Extension Order the number of houses erected and certified as fit for occupation during last year was 316, whilst within the same period plans were submitted for nearly 2,000 houses, mostly on the Keyham Barton estate, and in close proximity to the Royal Naval Barracks. Within the last few months the slopes of Ford Hill have commenced to wear an altered aspect by the formation of streets containing four and six-roomed houses which overlook the colony at Rocky Hill—known as the Dockyard Workmen's Dwellings. To the many private enterprises will shortly be added the municipal housing scheme in James-street, the back of Morice-square, and on a portion of the fifty acres just purchased at Weston Mill for a cemetery.

EXTENSION OF THE CENTRAL HOTEL, DUBLIN.—Quite recently some extensions have been carried out at the Central Hotel, Exchequer-street, Dublin. These additional buildings have become necessary owing to the demands on the hotel for commercial-travellers' stock show-rooms, and the new additions will be devoted to this purpose. The building occupies a situation at the junction of Exchequer-street and Dame-court, and has 117 ft. frontage along Dame-court. Both fronts are faced with Portmarnock red brick, having cut stone dressings. It is intended to connect it with the present hotel building by a subway under the road. It contains thirty stock-rooms, large and small. The upper floors are approached by wide, open stairs, having an electric lift fitted up in the central well space. The lift is a combined passenger and luggage lift, and has been erected by Messrs. R. Waygood & Co., of London. A telephone office and waiting-room are provided off the entrance hall. The basement story contains receiving rooms for goods, together with the machinery generating the power necessary for lighting the building and for hoisting goods and passengers. The electrical work has been carried out by Messrs. Egan & Tatlow. The contractors for the building work are Messrs. M. Meade & Son. The building was designed and its erection superintended by the Hotel Company's architect, Mr. W. M. Mitchell, R.H.A.

NURSING HOME, ROMSEY, HANTS.—H.R.H. Princess Beatrice formally opened, on the 11th inst., the Romsey Nursing Home, erected by means of public subscription as a memorial of her Majesty's Diamond Jubilee. The building has been erected in accordance with plans prepared by Mr. J. Jenvey, architect and surveyor, of Romsey, and the contract has been carried out by Messrs. Wheeler & Son, also of Romsey.

EXTENSION OF THE LONGMORE HOSPITAL FOR INCURABLES, EDINBURGH.—The extensive alterations and additions which have been in progress at the Longmore Hospital for Incurables, Edinburgh, are now completed, and the new wing has just been opened. The additions consist of a new wing, and, detached from the main building, a laundry and washing-house, mortuary, post-mortem room, and chapel. In connexion with these additions considerable alterations and rearrangement of the existing structure have been made. The new wing is of L-shape, with a frontage to Salisbury-place of 56 ft., in prolongation of that of the original building, and a frontage to the west of 130 ft. The new wing, two stories in height with a basement, is attached to the original building by a corridor of iron and glass, thereby placing it in close connexion with the kitchen and administrative department of the hospital. The ground floor is set apart for the reception of phthisical cases, there being a large ward for female patients to the south, and, at the west extremity, a corresponding ward for men. Each ward has, in a detached building, bath and lavatory accommodation, and the walls and floors are tiled. The entire capacity for beds is from 1,500 to 1,800 ft. On this floor there are also a ward kitchen and staff nurses' room. The connecting corridor separates the male and female wards, and passing across the building terminates in a covered porch, giving access to the garden. The basement floor, which is used for storage, is reached by a stair placed below a broad staircase to the upper story. The upper floor is laid out for the accommodation of cancer cases. There are two wards facing Salisbury-place for three and nine beds respectively, two wards for single beds, one ward for two beds, and one for six beds with bath-room and lavatory accommodation placed so as to be easily accessible. There are also a ward kitchen and staff nurse's room on this floor. The building is of fireproof construction, and the ward floors are laid with specially prepared teak wood. The wards are heated by steam radiators and open fireplaces. The considerable extension of the hospital involved a reconstruction of the kitchen department and the provision of additional rooms for the staff. The kitchen now measures 25 by 24 ft., and is ventilated and lighted from two sides. The kitchen store-room and larder walls are all tiled to the ceilings. Additional nurses' and servants' rooms are placed over the kitchen in rooms formerly occupied by patients, a bed-room and sitting-room being specially provided for any case of sickness in the nursing staff. The new washing-house and laundry are in a separate building, to which the boiler and engine house are attached. The whole building is constructed internally of white glazed brick, and in addition to the general washing-house and laundry, there is a separate washing-house and laundry for the staff. The whole building is now fitted with electric light, and an electrically-driven elevator has been installed for the conveyance of infirm patients to and from the upper floors. The drainage system has also been remodelled, iron pipes being everywhere substituted for fire-clay, formerly in use; and the main drains and connexions are placed in subways. The drainage subway has been utilised to give access to the mortuary buildings. These are placed at the Causewayside entrance to the hospital grounds, and consist of a post-mortem room, mortuary, chapel, and specimen room, with a dark-room for photographic purposes attached. The post-mortem room is equipped in the most modern fashion, and its walls, like those of the mortuary, are lined to the ceiling with glazed tiles. The alterations have been designed and carried out by Mr. J. M. Dick-Peddie, architect.—*Scotsman.*

MORTUARY BUILDINGS, HAMMERSMITH.—A new mortuary and coroner's offices for the parish of Hammersmith were opened recently. The site selected for the new buildings is about 100 ft. from the Fulham Palace-road, and faces a new road, 25 ft. wide, running along the west side of the land; the depth is 78 ft. 9 in., with a frontage to the new road of 70 ft. 6 in. The accommodation in the front block provides for the court, lobby and entrance, waiting-room, coroner's room, lavatories and closet accommodation on the ground floor, with caretaker's rooms above the waiting and coroner's room; there is a 10 ft. passage entrance and exit at each end, leading to the open yard 20 ft. wide. The mortuaries are on the east side of the open yard and consist of No. 1 ordinary mortuary, and No. 2 mortuary for infectious cases, separated by a lobby. Adjoining the No. 1 mortuary is the post-mortem room, and close by is the laboratory. A washhouse is situated at the north end of the block, and a shell-house and disinfecting-house at the other end. The buildings are constructed in stock bricks, with red bricks and Portland stone dressings. The general plan has been arranged to keep the various buildings separate, with sufficient air space between each. The coroner, jury, and witnesses, and other persons wishing to see the bodies, can do so from the viewing lobby. Mr. T. W. Thomas was the contractor for the whole of the work, except for the electric lighting and fittings, which was executed by Mr. T. L. Hellyar, of King-street. The contract, which included the fittings in the court, amounted to 3,743*l.* Mr. Alfred England has acted a clerk of works. Mr. Hugh Mair, the Vestry's Surveyor, was the architect of the buildings.

SANITARY AND ENGINEERING NEWS.

UPPER STOUR VALLEY DRAINAGE.—A Local Government Board inquiry was held on the 10th inst. at the District Council Offices, Old Hill, Rowley Regis, into an application made by the Upper Stour Valley Drainage Board to obtain a loan of 16,785*l.* to defray the estimated cost of extending the main sewers and making increased provision for sewage disposal. The inquiry was conducted by Mr. H. P. Boulnois, and among those present were Messrs. Martin and Fiddian, joint engineers. It was explained that the Board were constructing drainage works in the parishes of Rowley Regis, Halesowen, Quarry Bank, and a portion of the Borough of Dudley, and in September, 1893, the Board applied to the Local Government Board for sanction to borrow 110,000*l.* to carry out an entire system of drainage, but sanction was granted to borrow 108,215*l.* only, a balance of 1,785*l.* being held over. The Board now found it necessary to extend the main sewers from Typsiford Bridge in the direction of Netherton, and also to erect suitable farm buildings at Whittington, and also cottages at Whittington, Tividale, and Cradley Pool. The engineers gave details of the entire scheme.

STREET IMPROVEMENTS AT BLACKPOOL.—At the Blackpool Town Hall, on the 10th inst., Colonel Luard, representing the Local Government Board, held an inquiry respecting an application made by the Corporation for power to borrow 6,132*l.* for works of street improvement. Mr. Wolstenholme is the Surveyor to the Corporation.

APPOINTMENT.—Mr. G. Topham Forrest, architect, of the City Engineer's office, Leeds, has been appointed Assistant Architect under the County Surveyor, at the County Hall at Wakefield.

FOREIGN.

FRANCE.—M. Morin Goustiaux has been appointed architect to the American section for the 1900 exhibition.——M. Chaplain has just completed the engraving of a medal in commemoration of the election of M. Faure as President of the Republic ——M. Formigé has completed his design for the monument to be erected in Père Lachaise Cemetery in memory of the victims of the Charity Bazaar fire. It will consist of a very simple pedestal surmounted by an architectural *motif* and bearing an inscription. ——A committee has been formed at Clermont for the erection of a statue to Vercingetorix.——The Municipal Council of Paris has decided that a portion of the Bois de Vincennes is to be occupied for various annexes to the 1900 Exhibition. Exhibitions of railway materials and of auto-cars will, among others, find place there.——M. Couturand has been appointed architect-in-chief of the Department of Pas-de-Calais.——The architects of the Department of Seine Inférieure have opened a subscription for the restoration of Rouen Cathedral.—— M. E. Humblot, who was one of the principal collaborators of Alphand and Belgrand, has died suddenly at the age of sixty-eight. He was Inspecteur-Général of the Department of "Ponts et Chaussées," and Director of the "Service des Eaux" of Paris. The ability which he showed when entrusted by Belgrand with the hydraulic survey of the Yonne Valley, pointed him out especially for the management of important city works in Paris; and since 1867 he directed all the operations of the derivation of water from the Dhuys, the Vanne, and the Avre, and also designed the large reservoirs and pumping stations and the system of supply mains for bringing the water to Paris. He also conducted the operations for procuring water from the Vigne and the Verneuil, which were to have been finished in 1900. M. Humblot's name will remain connected with the large operations undertaken during the last three years for the improved sanitation of Paris.——M. J. A. Walker, who had a reputation as a military painter, has died at the age of seventy. He was the author of some well-known pictures, such as the "Billet de Logement," "La Brèche," the "Lendemain de Bataille," and "En Batterie."

THE MOORISH PALACE, MADRID.—This interesting house, which stands on the Paseo del Prado, opposite the National Art Museum, is offered for sale. It was designed and planned by Viollet-le-Duc, as a copy, on a reduced scale, of the Alhambra. The house is surrounded by a garden; the whole property covers an area of about 41,000 ft. superficial.

MISCELLANEOUS.

PROFESSIONAL AND BUSINESS ANNOUNCEMENTS.—Mr. S. A. Gillespie, land and estate agent and surveyor, has removed his offices (during rebuilding) from 45, Great Tower-street to 36, Great Tower-street, E.C.——Mr. J. H. Burton, architect, has removed from 2, Guide-lane to 150A, Stamford-street, Ashton-under-Lyne, and has taken into partnership his former manager and draughtsman, Mr. J. A. Percival. The style of the firm will be "J. H. Burton & J. A. Percival." —— Messrs. Vivian, Younger, & Bond, of 117, Leadenhall-street, have been appointed sole agents in London for the Warren Foundry and Machine Company, of Phillipsburg and New York.

HEREFORD AND DISTRICT MASTER BUILDERS' ASSOCIATION.—The second annual dinner in connexion with the Hereford and District Master Builders' Association took place at the Mitre Hotel, Hereford, on the 10th inst. Mr. W. P. Lewis (President) occupied the chair, and Councillor James Davies the vice-chair. Mr. John Davies, in proposing "The Mayor and Corporation of Hereford," suggested that the Artisans' Dwellings Act should be put into operation in the city. The Mayor (Councillor James) replying, said the Council hesitated from entering into any expenditure which was not absolutely necessary. They could not go into a speculation such as had been suggested at the expense of the ratepayers. It must be made to pay; and if it were possible for the Corporation to make it pay, it struck him that the builders themselves could make it pay better still as a private enterprise. Mr. Symonds (Cardiff) said that in reference to the relations between architects and builders, their relations in the past had not been altogether satisfactory; but in most cases now, he was glad to say, architects were guaranteeing their quantities. Mr. A. Krauss (Bristol) drew particular attention to the scarcity of plasterers. These men kept raising their terms, and the matter would have to be dealt with promptly. Among the other speakers were Mr. A. J. Corner, Mr. E. H. Lingen Barker, Mr. G. H. Goodsell, Mr. H. Easton, Mr. W. Bowers, Mr. J. Mitchell, Mr. L. Hodges, and Mr. L. D. Lewis.

"THE LOCAL GOVERNMENT ANNUAL."—This annual, "an official directory for 1899," is the eighth issue of an excellent and handy little work. It contains a great deal of useful and—as far as we have tested it—accurate information relating to Local Government in London and the country. The section dealing with statistics and points in relation to Local Government has been considerably enlarged, and it now forms an admirable encyclopædia of Local Government. The work is published at No. 2, Dorset-street, Fleet-street, E.C.

THE WHITEHALL IMPROVEMENTS. — On the 12th inst., Mr. Robert Vigers, President of the Surveyors' Institution, sitting as sole arbitrator, heard the claim of Messrs. Meynell & Pemberton, solicitors, against her Majesty's Board of Works for compensation for their premises, 20, Whitehall-place, acquired under the Whitehall Sites Act, 1897. Mr. Freeman, Q.C., and Mr. W. Cope appeared for the claimants, and the Attorney-General (Sir Richard Webster, Q.C., M.P.) and Mr. Danckwerts represented the Crown. The premises proposed to be taken consist of No. 20, with a modern erection in the rear, formerly occupied as mews. In 1871 the late Mr. Meynell purchased the Crown lease of the premises for the remainder of a ninety-nine years' lease from 1820; and notice of the intention of the Board to take the house having been served in 1896, Mr. Meynell let the whole to his firm, at a rental of 1,000*l.* per annum for the remainder of his lease. The claimants now claimed 20,005*l.*, for the value of the lease and for compensation for damage and disturbance to their business. This claim included 14,000*l.* for disturbance, being two years' profits of the business. The connexion of the firm was entirely a family one, and, having been unable to get adequate offices in the neighbourhood, they had been compelled to take offices at 30, Old Queen-street, at 461*l.* per annum, on which they had expended in improvements 4,206*l.* Mr. G. H. B. Glasier, surveyor, gave evidence. For the disturbance and damage by removal he did not consider two years' profits excessive. Mr. Daniel Watney, surveyor, estimated the profit rental at 350*l.* per annum, Mr. E. H. Tewson at 400*l.*, and Mr. H. C. Trollope at 450*l.* On the part of the Crown, Mr. James Green, Mr. W. E. Horne, and Mr. W. H. Elwell, surveyors, stated that, in their opinion, the rack rental of the premises was 1,000*l.* per annum. In their view the only compensation due to the claimants was for removal, and fittings as might be agreed. The Arbitrator reserved his award.

THE CITY DIARY AND ALMANACK FOR 1899.—This is the thirty-sixth year of publication of a well-known and useful little diary and almanack. Like previous issues it contains reliable information of special service to City men. It is published by Messrs. W. H. & L. Collingridge, Aldersgate-street, E.C.

PUBLIC IMPROVEMENTS, HANDSWORTH. — The Urban District Council of Handsworth, requiring 41,862*l.* for necessary improvements in the district, have applied in the usual course to the Local Government Board for sanction to borrow the amount. Mr. Boulnois, M.Inst.C.E., from the Board, attended at the Council House, Handsworth, on the 12th inst., to receive evidence in the matter. The sum is required for the following purposes:—Sewerage, 17,500*l.*; destructor depot in Queen's Head-lane, 15,030*l.*; street improvements, 4,000*l.*; improvement of Victoria Park, 2,362*l.*; erection of a fire-station, 2,200*l.*; refuse destructor, 770*l.* Among those present were Messrs. E. Kenworthy (Surveyor) and H. Ward (Clerk to the Council). The Clerk explained that during the year ending December 31, 269 building plans and thirty-five street plans were submitted, of which 189 building plans and twenty-nine street plans were approved. These represented 933 houses and shops, one set of schools, seventy-one alterations and additions, and twenty-nine new streets.

EEL PIE ISLAND, TWICKENHAM.—The greater part of this property, together with the hotel and goodwill, was recently sold at auction for 4,700*l.* The island, which of late years has formed a highly popular place of resort, is about 6 acres in extent; the sale affected nearly 4 acres, freehold, whilst one of the remaining 2 acres is leased, at a ground rent of 5*l.* per annum, for a term that will expire in 1903. At the dispersal in last November, at Sotheby's, of the second portion of the late J. Holbert Wilson's "Old London" collection, was sold, for 23*l.* 10s., a view, with figures (ascribed to Rowlandson), of the "Old Eel-Pie House at Twickenham."

ST. JOHN'S HOSPITAL, HIGH WYCOMBE.—We read that as fears are entertained lest the ruined walls of the hospital will speedily fall to pieces, the school governors are about to take steps for their preservation. The hospital, founded in 1175 for a master and poor brethren and sisters, was granted to the Corporation, who, by an agreement made on April 1, 1548, acquired the buildings, comprising the twelfth-century chapel and hall, for 30*l.*, on the condition that they would, within two years, establish the present school, which received letters patent dated July 21, 1562, from Queen Elizabeth. In 1869 the Charity Commissioners made a scheme for the future management of the school (wherein Waller had his education) and its endowments, with the almshouses on the Bowden bequest. In 1883 the school migrated to the adjacent buildings, erected after Mr. Arthur Vernon's plans and designs.

TRADE DINNER.—On Wednesday evening last the staff of Jos. F. Ebner's, 150, Old-street, London, E.C., held their annual dinner at the Holborn Restaurant. The chair was taken by Mr. Jos. F. Ebner, and the evening was occupied with toasts, speeches, and music by the various members of the staff.

EXHIBITION OF AMERICAN MANUFACTURES, &C., PHILADELPHIA.—The Department of Science and Art has received, through the Foreign Office, a copy of an Act providing for a national exhibition of American products and manufactures, to be held at the city of Philadelphia this year, for the encouragement of the export trade.

COVENT GARDEN THEATRE.—On Wednesday the lease of the Covent Garden Opera House changed hands, inasmuch as the Grand Opera Syndicate, which has so far had a sub-tenancy, has taken over some fifty years remainder of the lease held direct from the Duke of Bedford. Ever since the presentation of "Niebelungen Ring" there have been complaints as to the lack of modern appliances at Covent Garden as far as the stage is concerned, and it is stated that the new owners are contemplating certain improvements, which should add much to the smooth working of the performances. If such improvements are taken in hand in such a practical manner as to distinctly meet the somewhat peculiar requirements of this establishment, they will no doubt be serviceable. If, on the other hand, the general transfer of a Continental stage to London is contemplated, the results may be unsatisfactory, for though some of the modern Continental stages may be ideally constructed pieces of intricate mechanism, they are not always sufficiently suitable to practical requirements. There have been cases, indeed, where whole installations have been thrown out by the management as being too complicated to meet specific requirements. As far as the front of the house at Covent Garden is concerned, little is to be said, though there is, of course, room for improvement in the accommodation for the stall-holders and the sighting from the boxes. As to the safety of the house, too, though considerable improvements have been made of late, there is still ample scope for more, and we have no doubt that now the syndicate has a free hand, the more modern requirements in these respects will be fully considered.

SOCIETY FOR THE ENCOURAGEMENT OF THE FINE ARTS.—The lecture on "Some Goldsmiths and their work" announced for April 13, will be by Mrs. P. H. Newman, not "Mr. P. H. Newman," as given in a former paragraph.

CAPITAL AND LABOUR.

NEWPORT BUILDING TRADES.—The federated building trades of Newport have notified the masters of their requirements on and after May 1 next. In October last the Newport Master Builders' Association gave the workmen six months' notice as to certain alterations in the agreement subsisting between them; and now the men, having federated all workers engaged in the building trades, have replied. The federation asks for an increased wage as follows:—Carpenters, plasterers, masons, and plumbers, 9d. per hour; mason fixers, 9¼d.; bricklayers, 8½d.; painters, 8d.; general labourers, 6d.; and scaffolders, drainers, and engine tenters, 6½d. per hour. The federation also demur to working with non-Unionists; hitherto society men and non-society men have worked amicably side by side. The masters require several alterations, some of which are the outcome of the prolonged strike of last spring and summer. The masters demur to the federation being able to call out their members by giving two hours' notice, and wish to obtain an extension of the conciliation idea, by which there shall be no suspension of labour pending the decision of the Conciliation Committee, which is composed jointly of masters and men. They also wish to enforce a schedule that the wages of the average skilled workman shall be 8d. per hour.—*South Wales Daily News.*

BRICKLAYERS' STRIKE AT LEIGH, LANCASHIRE.—The fifty bricklayers of Mr. Cowburn, contractor, Leigh, have gone on strike on a novel point. The rules state that walking time shall be paid whenever men are sent from one town to another to work. Two bricklayers living at Tyldesley were employed at Tyldesley, and were naturally not paid walking time from Leigh like the other bricklayers. Consequently, all Mr. Cowburn's bricklayers have struck, and thrown forty labourers out of employment.—*Liverpool Mercury.*

LEGAL.

ANCIENT LIGHT DISPUTE AT KNIGHTSBRIDGE.

IN the Chancery Division of the High Court on Friday, the 13th inst., Mr. Neville, Q.C., moved before Mr. Justice Romer in the case of Austin *v.* Kellett. The plaintiff, Mr. Ambrose John Austin, sought an injunction restraining the defendant, Mr. Abraham Kellet, or his agents, from erecting on the site of the old premises called Middle Row, at the junction of Brompton-road with Knightsbridge (recently taken down), any building so as to darken or obstruct the ancient lights and windows of his premises, 35, Albert Gate.

Mr. Neville said the motion had been standing over for a considerable time upon the defendant undertaking not to raise his building in front of plaintiff's premises, and there had been a hope that the matter would be settled. Negotiations had been spun out, but nothing had resulted from them, and he was now instructed that the undertaking had not been observed, which, of course, was a very serious matter. He was asked particularly to press for an injunction that morning, but, inasmuch as the matter had been standing over so long he did not think that would be right, as his learned friend, who represented the defendant, ought to have time to put in his evidence, but he warned him that he should move for an injunction next motion day, and he should now ask that the undertaking should be continued.

Mr. Justice Romer: Oh, certainly.

Mr. Neville added that if the undertaking were broken he should move in respect of the breach as under the circumstances he thought the defendant should have been scrupulously careful to observe the undertaking.

Counsel for the defendant said this was the first he had heard of this breach of the undertaking.

The motion stood over until next motion day, the undertaking being continued.

"BUILDINGS" AND THE WORKMEN'S COMPENSATION ACT, 1898.

THE case of T. Mellor *v.* J. Tompkinson & Co. came before the Court of Appeal on the 14th inst., it being an appeal under the Workmen's Compensation Act of 1898 from a decision of the Liverpool County Court Judge.

Mr. Clavell Salter, who appeared for the defendants (the appellants), said that the plaintiff, on August 6, was at work at a wall in Vauxhall-road, Liverpool, when a piece of brick went into his eye, and subsequently the eye had to be removed. Four other men were at work on a derrick hauling a beam into position, and this hauling was the cause of the accident. The County Court Judge found that this was a "building" within the section, and that machinery was being used within the meaning of the Act, and these findings, the learned counsel submitted, were on the evidence wrong. Mechanical power did not comprise manual power, and the derrick was being worked by means of manual power at the time. The building was not 30 ft. high, and the use of a derrick, he submitted, was not an introduction of machinery such as made the section applicable to buildings of less height.

Without calling upon counsel for the plaintiff, their lordships dismissed the appeal with costs.

A CORPORATION AND ITS PRIVATE ACT: IMPORTANT CASE IN THE COURT OF APPEAL.

THE case of Donaldson *v.* The Corporation of South Shields came before the Court of Appeal on the 12th inst., on the appeal of the defendants from an order of Mr. Justice North in the Chancery Division granting the plaintiff, upon motion, an interlocutory injunction restraining the defendants from further proceeding under a notice to treat which they had served to take, under their compulsory powers, property abutting upon the intended frontage of a street, called Fowler-street, which they were widening under their private Act of 1896. The question between the parties was whether the defendants were entitled to take, in addition to the land actually required for widening a street, land adjoining, and to resell it at a profit, and so recoup themselves part of the expense of carrying out the authorised street works. The defendants had given the plaintiff notice to take premises belonging to her which were delineated in the Parliamentary plans and described in the books of reference deposited in accordance with Standing Orders previously to bringing in the Bill which afterwards ripened into the Act of 1896. The property in question abutted on the line of frontage of Fowler-street as intended to be widened under the powers of the Act, but was in part outside the limits of deviation allowed for the widening of the street itself. Section 41 of the Act of 1896 ran as follows:—"The Corporation may enter upon, take, and use all or any part of the lands following shown on the deposited plans, and described in the deposited book of reference—that is to say (1) for the purpose of street works, the lands shown on the deposited plans in connexion therewith, and which they may require for the purposes thereof respectively."

The Corporation (the defendants) contended that under the words of this Section they were, on the authority of the case of Galloway *v.* the Corporation of London, entitled to take land outside the limits of deviation allowed for the actual widening of the street itself. Mr. Justice North, however, held upon the construction of Section 41 that the defendants were not entitled to take land outside the limits of deviation, or any land not required for the actual widened street. Hence the present appeal. By mutual consent it was agreed to treat the appeal as if it had been brought from a perpetual injunction granted at the trial of the action.

At the conclusion of the arguments of counsel, the Master of the Rolls, in giving judgment, said that the case was a very important one for the Corporation. The point their lordships had to decide was simply whether the Corporation had under their Act power to take land admittedly not required for the construction of a street, or what he might call engineering works, but simply for the purpose of reselling at a profit or otherwise dealing

with it so as to reduce the cost of widening a street. The learned judge in the Court below held that the Corporation had no such power, and he (the Master of the Rolls) was unable to take a different view. A power to take land for what might be called financial purposes was certainly not to be found in that part of the Act which related to finance. He could not see how the language of Section 21 of the Act could be construed into meaning that land could be taken for a financial purpose, or that any inference to a similar effect could be drawn from the Act.

Lords Justices Rigby and Vaughan Williams concurred, and the appeal was dismissed, the injunction being made perpetual, and the costs of the action, including the costs of the appeal, given to the plaintiff.

Mr. Cripps, Q.C., and Mr. O. Leigh Clare were counsel for the Corporation; and Mr. Rawlins, Q.C., and Mr. Waggett for the plaintiff.

ACTION BY GRANITE, CONCRETE PAVING, AND WOOD-BLOCK FLOORING SPECIALISTS.

THE case of Ward & Co. *v.* the *Western Mail*, Limited, came before Mr. Justice Wright, sitting without a jury in the Queen's Bench Division, on the 13th inst., the action being brought by the plaintiffs, specialists in granite, concrete paving, and wood-block flooring, of 15, Great George-street, Westminster, against the defendants, the proprietors of the *Western Mail*, for 113*l.* for work done and materials supplied at the defendants' premises in Cardiff.

It appeared that in 1896 the plaintiffs laid down some granite concrete paving and wood block flooring for the defendants, under a written contract which stipulated that they should do the work in a good and workmanlike manner, to the satisfaction of the defendants. The defendants, however, said that cracks and holes had appeared in the paving, and that many of the blocks in the flooring had come loose, and, so, being dissatisfied with the work, refused to pay. The plaintiffs, on the other hand, said that the defects which had, or might have appeared, were due to special circumstances in the premises, and not to bad workmanship, and denied that the defendants had any reasonable grounds for rescinding the contract.

Mr. Justice Wright, after hearing the evidence, in giving judgment, said that the plaintiffs must have known what the words "to the satisfaction of the defendants" in the contract implied, and that the defendants had acted reasonably in rejecting the flooring and paving altogether.

Judgment was therefore entered for the defendants with costs.

Mr. Witt, Q.C., and Mr. H. A. Forman, appeared for the plaintiffs; and Mr. A. T. Lawrence, Q.C., and Mr. W. E. Lloyd for the defendants.

THE NEW BUILDINGS IN CLEMENT'S INN:

ACTION BY THE OWNERS OF DANES INN —IMPORTANT CASE.

THE case of Lord Battersea and others *v.* the owners of Clement's Inn came before Mr. Justice Kekewich in the Chancery Division on the 13th inst. on a motion by the plaintiffs for an interim injunction to restrain the defendants until the trial of the action from building a wall on their property at the eastern side of Danes Inn, Strand, in such a manner as to interfere with the access of light to the plaintiffs' property in Danes Inn.

Mr. Renshaw, Q.C., who appeared with Mr. Wood for the plaintiffs, stated that the defendants had for some time past been erecting a very high block of buildings on their property overlooking Danes Inn, and this block of buildings was the subject of the present action. Negotiations between the owners of Clement's Inn and Danes Inn took place in 1887 and 1888, which resulted in an agreement dated July 30, 1888. Under that agreement it was stipulated that the defendants might pull down certain buildings on their ground which backed upon Danes Inn and also that the plaintiffs, the proprietors of Danes Inn, might increase the height of their buildings, there being certain reservations as to the heights to which the buildings should be carried, and the angles of building so as to facilitate access of light. The plaintiffs had not increased the heights of their buildings, but their case was that the defendants had exceeded the heights allowed under the agreement and had interfered with the plaintiffs' ancient lights. One ground of complaint was that after allowing the slope back of defendants' building for a certain height, it then rose abruptly instead of the sloping being continued. The defendants' contention, he (Counsel) understood, was that the agreement of 1888 only settled the height of the front wall. Trouble began early in the autumn, when the plaintiffs' solicitor wrote that the building of the north-western end of the Clement's Inn block greatly interfered with their clients' property, and diminished their light. The writ in the action was issued on October 29.

His Lordship: They had liberty to go up to a certain point, and if they have gone above that point your claim is not for breach of agreement, but for interference with access of light without sanction.

Mr. Renshaw: Just so, my lord. My rights at common law remain, qualified wherever it may be by the agreement.

Mr. Renshaw then read the plaintiffs' filed evidence, amongst which was the affidavit of Mr. Jas. Smith Cooper, an architect and surveyor, who said that he occupied offices in Danes Inn, and had been engaged respecting the plaintiffs' property since 1888. The block of buildings on the west side of the courtyard of Danes Inn, containing ground floor and three floors above, enjoyed uninterrupted access of light over the buildings in Clement's Inn, now pulled down, except so far as the ground floor and the first floor were partially obstructed. In his opinion, if the defendants' building was continued the plaintiffs' light would be obstructed and the value of their premises seriously diminished.

His Lordship (to Mr. Renshaw): What are you asking for?

Mr. Renshaw: I am only asking on this occasion to keep affairs *in statu quo* until the trial.

Mr. Bramwell Davies, Q.C. (appearing with Mr. Stewart Smith for the defendants), read the defendants' filed evidence. Mr. Chas. Bull, the contractor, said that he had known both the plaintiffs' and defendants' premises since 1883, and since 1883 had occupied premises in Clement's Inn. Before the new building was put up, the old buildings in Clement's Inn, now pulled down, were higher than those of Danes Inn. The agreement of 1888 did not refer to roofs or chimneys, and he understood it fixed the height of the wall, but not of the roof In his opinion the plaintiffs at no time prior to the pulling down of the old building had uninterrupted access of light, but a lesser angle than they now obtained, and he denied that they would be deprived of light previously enjoyed.

Mr. Slade, the defendants' architect, said that he had, when making the designs, most carefully considered the height and position of the surrounding property. He denied that there was any material diminution of light to plaintiffs' windows as they now existed. The agreement of 1888 did not provide for slopes to roofs.

His Lordship: My view of this agreement is that it gives the defendants liberty to move their old building and to erect a new building under the conditions agreed—nothing more nor less.

Mr. Davies said he agreed that, as far as anything else was concerned, the parties were governed by their ordinary rights, but his contention was that there was a deduction to be drawn from the agreement. The owners of Danes Inn obtained power to increase the height of their building under this agreement. Was he (counsel) not then entitled to say that his lordship should, in deciding on what the defendants had done, take into consideration the fact that if Danes Inn were carried up, as the plaintiffs had power to do, there would be no question of the Clement's Inn building obstructing the lights as now complained of?

His Lordship: You want to treat an option as an obligation?

Mr. Davies: I want to treat as done that which they have power to do. I say that is the intention of the parties. They complain of several things at the present time. First, about their skylight windows. There is no obstruction whatever to these, except at a point on the north. The skylights were formerly in a well, and we have now given them a larger well. They have still their angle of 45 deg. which they had before. I understand your lordship does not take into consideration any windows they might put in if they chose under the agreement?

His Lordship: Those would not be ancient lights, but new lights.

Mr. Davies, continuing, said that the graver portion of the plaintiff's case was that affecting the windows on the west side of Danes Inn. They had their angle of 45 deg., and the defendants must, he submitted, be entitled to put some chimneys on their roofs. In conclusion he submitted that in view of the distance at which the Clement's Inn and Danes Inn property stood apart, there was not sufficient evidence to show that there was material interference with the plaintiffs' light, or that there would be such interference when the building was completed.

His lordship, in giving judgment, said that the ingenuity of surveyors, and, perhaps, their legal advisers, had been largely expended in confusing a perfectly plain issue. That was this: Had the defendants, by such part of their new building as went beyond the lines sanctioned by the agreement of July 30, 1888, interfered, or would they interfere when their building was completed, substantially with the access of light to the plaintiffs' building? The defendants had introduced a practically idle contention, which was that something else might or would happen if the plaintiffs hereafter exercised their option given to them by the agreement to raise their building. The plaintiffs had not exercised that option, and there was not a word in this case to show that the relative rights of the parties were in any way changed by the option. The construction of the agreement was plain. It provided for a new building under certain conditions, but there was no prohibition one way or the other. It was perfectly plain that the defendants were to be at liberty to build as provided by the agreement without justifying any complaint on the part of the present plaintiffs; leaving them otherwise free as to their actions subject to an interference by the law if they chose to overstep it. It was said that the parties must have contemplated that a certain number of chimneys were bound to be erected, but he was not bound to say that they contemplated chimneys being erected so as to interferfere with the access of light or otherwise create a nuisance. Now as to what the defendants had done by this particular wall: would it affect the light of Danes Inn when the defendants' buildings were completed? Here was a new building of enormous height in the place of a dwarf building, and it was quite impossible, to his lordship's mind, to say that that enormous building would not interfere with the access of light to houses on the other side of Danes Inn. Therefore he thought that an injunction must necessarily go to restrain, not a breach of the agreement, because he did not think that the agreement had been broken, but an interference with the light under the ordinary law.

Mr. Renshaw suggested that the form of the injunction had better be to restrain the defendants from building, or erecting any building or erection, so as to darken or obstruct the light to windows of Nos. 2, 3, 4 and 5, Danes Inn, and which such windows enjoyed prior to the pulling down of the tenements in Clement's Inn, upon which the present building was being erected, except so far as the defendants were authorised to build to the heights and angles shown in the plans under the agreement of 1888.

His Lordship: Very well. I do not think we need refer to the models. The agreement is sufficient.

UNFASTENED PUTLOGS.

AT Marylebone County Court last Friday, before His Honour, Judge Stonor and jury, Henry Cissell, a bricklayer's labourer, of Notting Hill, sought to recover from Messrs. George Godson & Sons, builders and contractors, of Pembroke Works, Kilburn-lane, London, W., damages, under the Employers' Liability Act, for personal injuries sustained, by reason of a defect in the condition of the plant connected with the defendants' business.

The plaintiff's case was as follows. He commenced to work for the defendants in May last, and on June 8 was engaged in attaching pails of mortar to a pulley at the Temple of Varieties, Hammersmith. Immediately after one of the pails had been hauled up, a heavy weight fell upon his head, knocking him to the ground. He next found himself in the West London Hospital. He received his orders from the general foreman on the job. As the pail went up he did not notice that it oscillated.

The Judge: When did you start work again after the accident?

The Plaintiff: About November 11, but I feel the effects of the accident still.

Richard Steedy, another labourer, stated that he saw the pail which was being hauled up catch against a putlog which was not properly fastened, and it fell, striking the plaintiff on the head.

The Judge: I do not think that there can be any defence to this action. The only question seems to be that concerning the damages.

No witnesses were called for the defence.

The jury returned a verdict in favour of the plaintiff, assessing the damages at 65*l.* Costs were allowed.

MEETINGS.

FRIDAY, JANUARY 20.

Architectural Association.—Illustrated lantern lecture by Mr. Beresford Pite, "Ancient and Modern Buildings in Palestine." 7.30 p.m.

Incorporated Association of Municipal and County Engineers.—Metropolitan meeting (to be held at the Institution of Civil Engineers' premises). Mr. E. P. Hooley will read a paper entitled "Notes on the Locomotives Act, 1898," and Mr. George Livingstone one entitled "An English Municipal Engineer's Visit to America." 7.30 p.m.

Royal Institution. — Professor Dewar on "Liquid Hydrogen." 9 p.m.

Glasgow and West of Scotland Technical College (Architectural Craftsman's Society).—Mr. Peter Fyfe on "The Housing of the Labouring Classes." 8 p.m.

SATURDAY, JANUARY 21.

Institution of Junior Engineers.—Visit to Streatham Hill Depot of the Brixton Cable Tramway. 3.30 p.m.

MONDAY, JANUARY 23.

Royal Institute of British Architects.—(1) Address to Students by the President, Professor Aitchison, R.A.; (2) Presentation of Prizes. 8 p.m.

Surveyors' Institution.—Mr. Edward Boyle, Q.C., on "The Rating of Collieries." 8 p.m.

Society of Arts (Cantor Lectures).—Dr. Samuel Rideal on "Bacterial Purification of Sewage." II. 8 p.m.

Liverpool Architectural Society.—Mr. Robert Hilton on "Enamels," with demonstration. 6 p.m.

Leeds and Yorkshire Architectural Society.—Mr. H. M. Fletcher, M.A., on "A Summer in Umbria." Illustrated. 6.30 p.m.

TUESDAY, JANUARY 24.

Institution of Civil Engineers.—Papers to be further discussed:—1. "The Effects of Wear upon Steel Rails," by Mr. William G. Kirkaldy, A.M.Inst.C.E. 2. "On the Microphotography of Steel Rails," by Sir William Roberts-Austen. 8 p.m.

COMPETITIONS, CONTRACTS, AND PUBLIC APPOINTMENTS.

COMPETITIONS.

Nature of Work.	By whom Advertised.	Premiums.	Designs to be delivered.
*Refuse Destructor	Tottenham U.D.C.	25*l.*; 15*l.*; 10*l.*	Feb. 7
*School Buildings	Beverley GrammarSch.	25*l.* and 10*l.*	Mar. 4
*Memorial Hall and Art Gallery	Bradford Corp.	150*l.*: 100*l.*; 50*l.*	April 14

CONTRACTS.

Nature of Work or Materials.	By whom Required.	Forms of Tender, &c. Supplied by	Tenders to be delivered.
*Widening Road, &c	Beckenham U.D.C.	J. A. Angell, Council Offices, Beckenham	Jan. 23
*Thames Ballast and Sand	Hackney Vestry	J. Lovegrove, Town Hall, Hackney, N.E.	Jan. 25
*Hospital	.....	A. Waterhouse&Son,20,New Cavendish-st. W.	do.
Station, Wingate, Durham	N. E. Ry. Co.	W. Bell, Archt. Central Station, Newcastle-on-Tyne	do.
Cottages, Manstone	Isle of Thanet Union	L. Grant, Archt. High-st. Sittingbourne	do.
Boiler House, &c.	Cranbrook (Kent) Union	T. H. Crampton, Cranbrook	do.
Additions, Persie Manse, Blairgowrie, N.B.		L. & J. Falconer, Archt. Blairgowrie	do.
Boundary Walls, &c. Upper Witton	Aston Manor U.D.C.	H. Richardson, C.E. Council Offices	do
*Road Making and Paving Works	Fulham Vestry	C. Botterill, Town Hall, Walham Green	do.
*Asphalting Carriageways	do.	do.	do.
Public Baths	Glasgow Corp.	J. Lindsay, City-chambers, Glasgow	Jan. 26
Additions to Farm, Garvock, N.B.	.....	Scott & Gardner, Stonehaven, N.B	do.
Road Works	Withington (Lancs.) U.D.C.	A. H. Mountain, C.E. Town Hall	do.
Science Buildings, North Eastern Counties School, Barnard Castle	...	Clark & Moscrop, Archt. Darlington	do.
Street Works	Middlesbrough Corp.	F. Baker, C.E. Municipal bldgs. Middlesbrough	do.
*Carting-away Slop and Sweepings	St. Marylebone Vestry	The Clerk, Court House, St. Marylebone, W.	do.
*Street Watering	do.	do.	do.
Infirmary and Workhouse Additions	Bakewell Union	E. M. Longsdon, Archt. Town Hall	Jan. 28
Four Houses, Richmond-place, Ilkley	.....	E. B. Johnson, Archt. Ilkley	do
Technical Institute, Old Trafford, Manchester	Stretford U.D.C.	J. Bowden, 14, Ridgefield, Manchester	do.
Sewer, Minnie Dale	Surbiton U.D.C.	S. Mather, C.E. Victoria-road, Surbiton	do.
*Sewering and Road Making	Hornsey U.D.C.	E. J. Lovegrove, Offices, Southwood-lane, Highgate, N.	Jan. 30
Sewer, Asylum-lane, Dunston	Whickham U.D.C.	J. P. Spencer, C.E. 13, Grainger-street West, Newcastle	do.
Pair Villas, Manor Heath-road, Halifax		A. G. Dalzell, Archt. 15, Commercial-st. Halifax	do
Building Work, &c.	Granton (N.B.) Gas Commrs.	W. R. Herring, Engr. Gas Works, Edinburgh	do.
Additions to Workhouse	Northallerton Union	Fairbank & Son, C.E. 13, Lendal, York	Jan. 31
Extension of Electric Lighting Station, Eldon-road	Cardiff Corp.	W. Harpur, C.E. Town Hall	do.
*Road Making and Paving Works, Ellerdale-street	Lewisham B. of W.	Surveyor's Dept. Town Hall, Catford	do.
*Road Making and Paving Works, Aitken and Burmeston-roads	do.	do.	do.
Road Materials	St. Thomas (Exeter) R.D.C.	J. Bray, Surv. Alphington	Feb. 1
Street Works, Helena-street	Mexborough (Yorks.) U.D.C.	G. F. Carter, C.E. Council Offices	do.
School, Balliol-road	Bootle (Lancs.) Corp.	E. Reid, Surv. 7, Westminster-chmbrs. Liverpool	do.

CONTRACTS—*Continued.*

Nature of Work or Materials.	By whom Required.	Forms of Tender, &c. Supplied by	Tenders to be delivered.
Stores Extension, Hammerton-street, Burnley	Equitable Indus. & Co-op. Soc. Ltd.	T. Bell, Archt. 14, Grimshawe-st. Burnley	Feb. 1
*Technical School	Bootle Corp.	J. H. Farmer, Town Clerk, Bootle	do.
*Paving Dinsdale-road and Glenforth-street	Greenwich B. of W.	Board's Offices, 141, Greenwich-rd. Greenwich	do.
*Yorkshire Stone	do.	do.	do.
*Jarrah Wood Paving	Hampstead Vestry	Surveyor, Vestry Hall	Feb. 2
Sewers	Llandudno U.D.C.	E. P. Stephenson, Engr. Church Walks, Llandudno	do.
Stabling, &c. Grove Brewery, Luddenden Foot, Yorks.	.....	J. F. Walsh, Archt. L. & Y. Bank-chambers, Halifax	Feb. 3
Two Bridges, Hope Beck, Brackenthwaite	Cockermouth R.D.C.	J. B. Wilson, C.E. Court-buildings, Cockermouth	do.
Rebuilding Allen's Arms Inn, Mountain Ash, Glam.	G. Kenshole	G. Kenshole, Duffryn House, Ystrad Mynach	do.
*Broken Granite	Norfolk C.C.	The Clerk, Shirehall, Norwich	Feb. 4
*Works and Materials (various)	St. Marylebone Vestry	The Clerk, Court House, St. Marylebone, W.	do.
*Broken Stone, Footway Kerb, and Yorkshire and Other Footway Paving	do.	do.	do.
Additions to Spital Tongues School	Newcastle-on-Tyne Sch. Bd.	W. L. Newcombe, C.E 89, Pilgrim-st. Newcastle	Feb. 6
Additions to Schools	Normanton (Derby) Sch Bd.	Naylor & Sale, Archt. Irongate, Derby	do.
Additions to Public Baths, Cookridge-street	Leeds Corp.	Hanstock & Son, Archt. Branch-rd. Batley	do.
Extensions to Chapel, Benllech, Anglesey		J. Owen, Archt. Menai Bridge	do.
*Various Materials	Newington Vestry	L. J. Denham, Vestry Hall Walworth, S.E.	do.
*Services and Materials (various)	Lambeth Vestry	H. Edwards, Vestry Hall, Kennington, S.E.	Feb. 9
*5½ miles of Aqueduct	Birmingham Corp.	J. Mansergh, 5, Victoria-st. S.W.	Feb. 10
Drainage Works	Cirencester U.D.C.	T. Hibbert, Sur. Cirencester	Feb. 14
Church Works, St. George's Church, Leeds	.....	H. Walker, Archt. 8, Upper Fountaine-st. Leeds	do.
*School, West Hampstead	Asker Haberdashers' Sch.	H. Stock, 9, Denham-st. London Bridge, S.E.	No date
*Alterations to School	Stone Sch. Bd.	F. W. Kirby, Galley Hill, Greenhithe	do.
School, Burton-rd. Hunslet	Leeds Sch. Bd.	J. M. Bottomley, Archt. Bank-chambers, Park-row, Leeds	do.
Institute, Sleeton, Yorks.	.....	Judson & Moore, Archt. Keighley	do.
Bank Premises, Witham, Hull	.....	Brodrick & Co. Archt. 77, Lowgate, Hull	do.
Additions to Institute, Albion-st. Hull	.....	do.	do.
Business Premises, Chanel-lane, Hull	Todd & Wardell	do.	do.
Alterations to Shops, Middlesbrough	W. Martin	R. Moore, 27, Albert-road, Middlesbrough	do.
Warehouse, &c. Curzon-rd. Morecambe	....	Rayner & Sager, Alfred-st. Blackpool	do.
Pair Villas, Ashton-under-Lyne	.....	George & Son, Archt. Old-sq. Ashton-under-Lyne	do.
Extension of Lowther Arcade, Harrogate	.....	G. E. Bolshaw, Archt. 189, Lord-street, Southport	do.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in.
*Architectural Assistant	Norwich Corp.	.....	Jan. 25
*Surveyor of Highways	East Stow R.D.C.	120*l.* per annum	do.
*General Foreman	Battersea Vestry	5*l.* per week	do.
*Clerk of Works	Bristol Docks	3*l.* to 3*l.* 10*s.* per week	Jan. 26

Those marked with an asterisk (*) are advertised in this Number. *Competitions, p.* iv. *Contracts, pp.* iv. vi. viii. & x. *Public Appointments, pp.* xviii. xix. & xxi.

Northampton Institute, Clerkenwell.—Lectures on Mediæval Architecture, by Mr. Francis Bond, M.A. III.—"Architecture and Ritual." 7.45 p.m.

WEDNESDAY, JANUARY 25.

Liverpool Engineering Society.—Mr. Oswald W. Young on "Observations on the Rating of Machinery." 8 p.m.

Northern Architectural Association.—Mr. Frank Baker on "Monumental Brasses." 7.30 p.m.

THURSDAY, JANUARY 26.

Society of Antiquaries.—8.30 p.m.

Institution of Electrical Engineers.—(1). "Rules for the Regulation of the Wiring of Premises for Connexion to Public Supply Mains," by Mr. J. Figg. (2). "The Regulation of Wiring Rules," by Mr. C. H. Wordingham. (3). "The Institution Wiring Rules," by Mr. R. E. Crompton, Past President. 8 p.m.

FRIDAY, JANUARY 27.

Institution of Junior Engineers. — Professor J. A. Ewing, F.R.S., on "Measurements of Elasticity" (at the Westminster Palace Hotel). 8 p.m.

Institution of Civil Engineers (Students Meeting).—Mr. F. C. Grimley on "King's Lynn Water Works." 8 p.m.

SATURDAY, JANUARY 28.

St. Paul's Ecclesiological Society. — The Annual Meeting (at the Chapter House). 2.30 p.m.

Institution of Junior Engineers.—Anniversary Dinner (at the Westminster Palace Hotel). 7 p.m.

RECENT PATENTS:

ABSTRACTS OF ACCEPTED SPECIFICATIONS.

Open to Opposition until February 28.

[1897]. 30,798.—PAVEMENTS, FLOORS, STAIRS, &C.: *W. A. Dellagana and Major W. H. Hand.*—A retaining plate or layer, resting on the bed or floor, engages blocks or sections that project above the plate, the blocks being fashioned so that they can be readily withdrawn. In order that the pavement or tread may be practically noiseless, indiarubber or other cushioning material may be placed between the bed and the blocks, or between adjacent blocks and contiguous portions of the retaining plate.

[1898]. 399.—GULLY TRAPS OR CESSPOOLS: *J. Hutchison.*—The invention is designed mainly to so construct the cesspool with its combined trapping arrangement that nearly the whole of the cesspool's interior is utilised for collecting sedimentary matter. To that end the box, or other cesspool, is made with a round or square section, and with a water trapping or sealing device on its outside. The trap's inlet end is formed under the channel on the lip of the cesspool, and the outlet has a spigot end for the faucet end of an adjoining drain-pipe, the combined device, its hoods and cover excepted, being made as one solid piece. The cover has a small aperture over the syphon inlet fitted with a removable metal plate, and a larger aperture fitted with a grating, through which the surface water flows over the hood and into the cesspool. The overflow from the cesspool passes over the projecting lip or tongue of the outflow channel, and thence into the syphon and drain.

891.—GENERATORS AND LAMPS FOR ACETYLENE GAS: *S. T. Richardson and R. Price.*—The claims comprise the combination of a water-vessel and a generating-vessel connected at their lower parts by a pipe, fitted with a stop-cock, and at their upper parts by another pipe also fitted with a stop-cock and having a gas outlet pipe to the burner, the parts being so arranged that the act of closing the stop-cocks simultaneously shuts off the supply of water to the generating vessel and the supply of gas from the generating vessel to the burner.

2,085.—CONTRIVANCE TO RENDER WINDOWS DRAUGHT-PROOF: *H. M. Hufeland.*—The device consists of a small wheel or roller, having an elastic periphery, which is fixed on the stop-bead of the window frame by means of a screw, the periphery presses against the sash stile, and keeps it firmly against the parting bead.

2,153.—VENTILATORS FOR DRAIN TRAPS, &C.: *J. Hutchison.*—In order to dispense with a separate ventilating branch, and to provide a ventilator which can be fitted in or on the ordinary access branch of the trap, the inventor forms the ventilator in the shape of a round box enclosing a second box or pipe, at the bottom of the outer box is an outer flange to form a sole or base, and at the bottom of the inner box is an inner fillet to support the seal or stopper; the two shells are united at the bottom by ribs and at the top by a flat flange on whose upper surface a raised rim serves as a socket for the perforated cover plate; around the socket are apertures for cleaning purposes, and a little below the socket, in the inner shell, are ventilating apertures; when fixing the ventilator in position the workman has simply to adjust the pipe or pipes that form the trap's air-shaft so that the ventilator shall be at the proper elevation for receiving the perforated surface-cover, when the ventilator is fitted in position the air current from the surface is made to pass through the outer annular cavity and into the shaft below the stopper.

2,485.—IMPROVEMENT IN ELECTRICAL ARC LAMPS: *C. Oliver.*—To a movable part of the regulating mechanism, for example, towards one end of a transverse bar pivotted between a shunt and a series solenoid and carrying cores working therein, is attached a cord, or chain, whose other end is attached to the carbon or carbon holder or carbon holder rod, so as not to limit the full run thereof, and so that the weight of the cord or chain may be borne gradually from the carbon to the regulating mechanism, or *vice versa*, and also so that the increased or diminished weight upon the mechanism shall compensate for the different positions of the cores in their solenoids, and thus keep the arc burning uniformly throughout the length of the carbons.

2,896.—MANUFACTURE OF PORTLAND CEMENT: *E. H. Hurry and H. J. Seaman.*—The invention includes the feeding and preparation of the material, its feed to the furnace, the roasting of the material to form the clinker, the crushing, feeding, and cooling of the clinker, its final grinding and packing for shipment, all the processes being adapted for an automatical and continuous operation without the necessity of handling by attendants.

3,237.—TIPPING TANKS FOR WATER-CLOSETS: *W. J. Duckett & Son, A. Duckett, F. S. Button, C.E., and J. W. Bullock.*—The invention relates to the construction of rubber buffers placed at the back of the tipper-box, and is devised to make the fittings more durable and less expensive; instead of being fixed on their rods or axles, the buffers are loosely mounted thereon in such a manner that, as the tipper tilts, a small projection thereon bears slightly against the rubber buffer and causes it to revolve somewhat before the tipper is finally stopped by the lip near the bottom, whereby the sudden rebound and shock of the tipper is lessened, noise is diminished, and the parts are exposed to less wear and tear.

3,582.—CHURNING WHITE LEAD AND OIL INTO A PASTY CONDITION: *Professor G. Bischof.*—The apparatus consists of a vat, through whose cover passes a rod on which are fixed two or more beaters, whose upper sides are

bevelled; a crank or eccentric on an overhead revolving shaft effects the vertical reciprocation of the rod and its beaters, whilst oil is gradually introduced into the vat. After a time the oil and white lead become compounded into a paste that settles at the bottom, leaving the separated liquor clear above. The liquid is drawn off, the paste is removed through a lateral hole near the bottom of the vat, and can be freed from liquid or water by pressure or otherwise.

4,234.—SEWER VENTILATION AND AËRATION: *F. G. S. Ham.*—To the cover in general use having ventilation openings is fitted a dirt box, suspended from the frame of the cover and made to fit on the flange on the frame, so that no sewer gas can pass. One end of a vertical pipe carried through the bottom of the box extends to a point near the cover's underside, a check-valve, hinged to the underside of the bottom of the box, has a lever and balance-weight. When the box is fitted under a sewer ventilating cover it will allow fresh air to enter the sewer and will prevent the escape of sewer air from the fact (according to the claim) that the check-valve opens only when the down-draught is sufficient to press open the valve.

4,709.—IMPREGNATION OF WOOD WITH FIRE-PROOFING, WATER-PROOFING, PRESERVING, AND COLOURING MATERIALS: *Lieutenant H. V. Simpson, R.N.*—The wood is enclosed in an air-tight receiver and submitted to the action of steam, then the receiver is exhausted by means of an air-pump and the impregnating solution is run into the receiver; for non-hygroscopical and anti-corrosive solutions the claim extends to the adoption of sulphate and phosphate of ammonia and zinc with or without liquid ammonia, and with or without lime, whilst, to guard against undue absorption of moisture, the zinc may be replaced with copper or with a combination of zinc and copper with enough ammonia to dissolve it so as to form a hydroxide of cupra-ammonia or of cupra-zinc ammonia.

5,660.—DRAIN HOLES AND GRATINGS OF SINKS, DRAINS, &c.: *G. Hyde.*—For making a water-tight joint, and to provide for the joint being cleaned from the inside, and for the locking of the grating in its recess, the inventor prolongs the drain hole to form a dependent ring below the bottom of the vessel, around that ring he forms another dependent ring, the two supplying a concentrical cavity for receiving the end of the soil or other pipe, and the outer ring acting as a collar for the cement of the joint; at the top of the drain hole are cut downward slots to communicate with semi-circular grooves around the hole, through the slots and into the grooves engage L-shaped lugs on the grating's underside, which when the grating is turned, say, through 45 deg., lock it in position in its recess formed around the top of the drain hole, after the type of the well-known bayonet joint.

6,452.—BRICKS, TILES, SLABS, OR BLOCKS, FOR USE IN THE CONSTRUCTION OF FLOORS, ROOFS, VAULTS, &C.: *C. Weyler.*—Instead of using metal insertions of new materials in varying forms, and comparatively expensive, are adopted stamped waste sheet metal such, for instance, as is formed in stamping out discs for making electrical or other signal bells; for the use of these is claimed the additional advantage of allowing the substance of the brick or slab, when it is being cast or moulded, to pass freely through the holes stamped in the metal insertion, and of acting (when cast standing up on edge in blocks) as though they were latticed girders connected, the one with another, by ties, &c.

7,418.—TREATING LEVIGATED SLATE FOR THE MANUFACTURE OF CHIMNEY PIECES AND OTHER SLATE GOODS: *H. Miller.*—The ground slate is mixed with a resinous compound and then heated and pressed into moulds, hardened, and fired.

20,005.—DIES FOR MANUFACTURING SANITARY PIPES WITH TAPER ENDS: *J. Staley & J. Parker.*—The claim is for the employment of a taper bottom centre and taper mould-box or outside die in segments which are hinged to the table in conjunction with a clamp fixed to the underside of the die plate.

21,860.—FIREPROOF FLOORS, CEILINGS, OR SIMILAR SURFACES: *P. Vanhauten, L. Plumen, & M. Noppeney.*—The floor, or similar surface, is composed of hollow tile-shaped plates, or has several hollow spaces of any cross-section, placed between the joists, the upper snrfaces of the plates being arched or sloped downwards from the centre towards the sides and the lower surface flat, whilst the upper surfaces are, preferably, provided with grooves lengthwise.

23,049.—MEANS FOR ATTACHING SASH-LINES TO WINDOW-SASHES: *E. Beckton.*—A casting or stamping is let into the sash, and fixed by ordinary wood-screws, and a knot is tied on the end of the sash-line which can be slipped in, and out of, the casting, which is ⌊⌋-shaped in section.

NEW APPLICATIONS.

January 1—7.

2, J. S. Highfield, Connecting Electrical Mains. 8, Vaughan & Foster, Electrical Reversing Switch with Liquid Resistance. 12-3, Dorothy M. Crawford-Moore, Dust and Refuse-cart Coverings, and Sliding Window-sashes and Frames. 14, J. Anderson, Control of Ball-taps in cisterns. 15, S. J. Woodhouse, Paving-blocks. 18, T. G. Aitken, Open and Close Ranges. 42, E. Forbes, Gas-check. 49, M. Wolff, Drying Bricks, Earthenware, &c. 51, T. H. White, Cowls. 52, Gundrys, Weighing-machine Register and Totalling Apparatus. 56, C. A. Richardson, Sanitary Paints, Varnishes, Enamels, &c. 63, A. M. Plaissetty, Incandescent Mantles, Filaments, &c. 71, H. Schuppmann, and 194, J. A. Schädlich, Stoves. 73, W. J. Williams, Blow-pipes. 76, Erie Safety Window Co., Window Frames and Sashes. 85, M. J. Adams, Fireplaces. 86, W. Bobbett, Tool Handles. 89, J. E. Preston, Ball-tap for Cisterns, &c. 92, J. Weeks, Hydraulic Jacks. 96, Andersens, Supports for Electrical Conductors. 97, W. F. Goreham, Flushing-tanks. 103, Dussourt & Légé, Saws for Cutting Marble, Slate, Stone, &c. 107, F. Kirk, "Artificial Stone in situ." 108, J. H. Noad, Electricity Meters. 118, G. Wise, Lamps or Stoves for Plumbers, &c. 137, M. Rothenbücher, Paper Adjuster and Guard for use by Draughtsmen and others. 140, J. Rockefeller, Adjustable Saw-tables. 141, Marie L. Guerrier-Morel, and 203, F. H. Smith, Acetylene gas generators. 143, F. Prestidge, and 205, F. H. Smith, Acetylene Lamps. 155 and 293, A. E. Baines, Sealing Enclosed Arc Lamps, and Electrical Re-action Coils. 157, Cordes & Daniel, Water-Meter. 159, J. Wade, Domestic Fire-range. 164, W. Parker & Co., Circular Saw-Guard. 165, Briscoe & Jones, Electrical Cord Grip Lamp Holder. 166, F. Ryley, Fire Grates with Hot-air Chamber or Pipes. 172, T. C. Fawcett, Presses for Sand Faced and other Bricks. 176, W. W. J. Nicol, Cutting Mitre and other Angle Joints. 186, Madeleine Robert, Composition for Cleaning Marble, Statuary, &c. 196, G. Ree, Fettling and Ornamenting Ridge Tiles. 200, G. Thomas-Davies, Arc Lamps. 215, R. Bryson, Paint and Varnish Remover. 218, J. Mülenthaler, Safety Plugs for Electrical Installations. 227, J. Taylor, Knob and Spindle Attachments. 242, Pettit & Rettich, Glue-pots, &c. 245, Williams & Walford, Radiator for Hospitals, Infirmaries, &c. 252, J. T. Lister, Means for Uniting the Filament and Leading-in Wires of an Incandescent Electrical Lamp. 253, E. J. Dolan, Gas-burners, 264, R. L. Doran, Incandescence Vapour Lamps. 274, W. P. Thompson, Articles of Pressed Wood, &c. 315, Oxley & Howe, Venetian and Similar Blind Foldings. 324, Guillaume J. C. M., Baron de Liebhaber, Removal of Rust from Iron. 325, W. English, Outdoor Seats. 331, J. Tourtel, Seal Locks. 334, Rigby & Taylor, Automatically Closing, Opening, and Fastening the Doors of Hoists, Lifts, &c. 341, Elizabeth Rowland, Combined Heating, Cooking, and Ventilating Stove or Fire-place. 345, H. V. Simpson and Others, Fireproof Compositions for Painting or Covering Surfaces. 349, S. Tuttle, Air Registers or Ventilators. 356, L. W. Gans, Incandescent Materials for Electrical Lighting. 361, E. Day, Casting Leaden Bends, Elbows, Pipes, &c. 379, Proctor & Butterfield, Nail Extractor. 380, C. A. Lee, Switches, Wall Sockets, Contact Makers, &c. 381, R. Heginbotham, Draught Excluder for Doors. 387, F. Unterberg, Iron Wall Carriers for Insulators, &c. 393, W. Godsell, Glass Cup Protector for Incandescent Gas Mantles. 401, H. O. Strong, Atmospherical Burners for Gas Heating. 406, Temperleys, Wood Paving and Flooring. 410, T. W. Barber, Lathe Face Plate Jaws. 415, S. Broadbear, Oil and Similar Cans. 416, A. Barman, Electrical Heaters. 417, C. N. Nielsen, Preservative Paint or Coating for Pasteboard Roofing Material, &c. 422, C. E. Campbell, Electrical Light Switches. 423, C. T. Kingzett, Testing or Disinfecting Drains. 425, O. Scharlach, Attaching the Covers or Gas Collectors to Carbide Containers or Acetylene Lamps. 434, C. Nuber, Flushing Apparatus. 447, Merritt & Weeds, Combined Adjustable Trammels, &c.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

January 10.—By COCKETT & HENDERSON.

South Woodford.—Cleveland-rd., Southwold Lodge, f. £1,850

By J. J. HILL & WEAVER (at Masons' Hall Tavern).

City of London.—Cullum-st., "The Rose and Crown" p.-h., u.t. 20 yrs., r. 180*l.*, with goodwill 3,800

January 12.—By FURBER, PRICE, & FURBER.

St. John's Wood.—3, Upper Hamilton-ter., u.t. 40½ yrs., g.r. 20*l.* 2,500

Forest Gate.—9 and 11, Haslemere-rd., u.t. 92 yrs., g.r. 10*l.* 10s. 355

By W. B. MASON.

Twickenham, Middlesex.—"Eel Pie Island Hotel" and 3 a. 3 r. 15 p., f., with goodwill .. 4,700

By NEWBON, EDWARDS, & SHEPHARD.

Barnsbury.—10 and 11, Cumberland-st., u.t. 57½ yrs., g.r. 14*l.*, r. 81*l.* 960

Highbury.—172 and 195, Blackstock-rd., u.t. 72 yrs., g.r. 22*l.* 10s., r. 105*l.* 855

205, Blackstock-rd., u.t. 72 yrs., g.r. 10*l.*, r. 40*l.* 400

Holloway.—126, Holloway-rd., u.t. 8 yrs., g.r. 33*l.*, r. 65*l.* 100

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; e.r. for estimated rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; yd. for yard, &c.

PRICES CURRENT OF MATERIALS.

TIMBER.		
Greenheart, B.G.	ton	8/0/0 — 0/0/0
Teak, E.I.	load	10/10/0 — 15/10/0
Sequoia, U.S.ft.cu.		1/9/0 — 2/0/0
Ash, Canada, load		3/17/6 — 5/5/0
Birch, do.		3/0/0 — 5/0/0
Elm, do.		4/12/6 — 5/15/0
Fir, Dantsic, &c.		2/0/0 — 4/0/0
Oak, do.		3/5/0 — 3/15/0
Canada		4/0/0 — 6/0/0
Pine, Canada red.		0/0/0 — 0/0/0
Do. yellow		4/7/6 — 6/5/0
Lath, Dantsic, fath		4/10/0 — 5/10/0
St. Petersburg.		4/0/0 — 6/10/0
Wainscot, Riga, &c., log		3/15/0 — 5/15/0
Odessa, crown		3/15/0 — 5/15/0
Deals, Finland and & 1st std. 100		9/15/0 — 10/5/0
Do. 4th & 3rd.		9/15/0 — 10/5/0
Do. Riga		8/5/0 — 9/5/0
St. Petersburg, 1st yellow		11/15/0 — 14/5/0
Do. 2nd yellow.		10/15/0 — 12/5/0
Do. white		9/15/0 — 11/15/0
Swedish		9/15/0 — 16/15/0
White Sea		10/15/0 — 18/0/0
Canada, Pine 1st		18/15/0 — 25/5/0
Do. do. 2nd		13/15/0 — 17/0/0
Do. do. 3rd, &c.		6/0/0 — 10/0/0
Do. Spruce, 1st.		8/10/0 — 10/10/0
Do. do. 3rd and 2nd		7/5/0 — 8/10/0
New Brunswick		7/5/0 — 8/0/0
Battens all kinds		5/0/0 — 16/0/0
Flooring boards, sq., 1 in., prep. 1st		9/6 — 16/3
Do. 2nd		8/0 — 13/3
Other qualities—		6/3 — 7/0
Cedar, Cuba, ft.		/4 — /4½
Honduras, &c.		/3¾ — /4¾
Mahogany, Cuba		/5½ — /7
St. Domingo, cargo av.		/5 — 1/3
Mexican, do. do.		/3¾ — /4
Tobasco, do. do.		/4 — /6½
Honduras, do.		/4 — /6
Box, Turkey, ton.		4/0/0 — 15/0/0
Rose, Rio		7/0/0 — 14/0/0
Bahia		6/0/0 — 12/0/0
Satin, St. Doming.		/5 — 1/0
TIMBER *(continued).*		
Satin, Porto Rico		0/0/9 — 0/2/0
Walnut, Italian		0/0/3 — 0/0/7
METALS.		
Iron—Pig, in Scotland	ton	2/11/10½ — 0/0/0
Bar, Welsh, in London		6/0/0 — 6/5/0
Do. do. at works in Wales		5/15/0 — 5/17/6
Do. Staffordshire, in London		6/5/0 — 7/10/0
COPPER—British cake and ingot		66/10/0 — 67/0/0
Best selected		67/0/0 — 67/10/0
Sheets, strong		70/0/0 — 72/0/0
Chili bars		62/15/0 — 0/0/0
YELLOW MTL.	lb.	5¾d. — 6d.
LEAD—Pig Spanish	ton	13/10/0 — 0/0/0
English com. Brands		13/15/0 — 0/0/0
Sheet, English 6 lbs. per sq. ft. and upwards		14/15/0 — 0/0/0
Pipe		15/5/0 — 0/0/0
ZINC—English sheet	ton	28/0/0 — 0/0/0
Vieille Montagne		29/0/0 — 0/0/0
Spelter		24/10/0 — 24/12/6
TIN—Straits		98/17/6 — 0/0/0
Australian		99/5/0 — 99/15/0
English Ingots		102/0/0 — 103/0/0
Banca		0/0/0 — 0/0/0
Billiton		0/0/0 — 0/0/0
OILS.		
Linseed	ton	17/0/0 — 0/0/0
Cocoanut, Cochin		27/15/0 — 0/0/0
Do. Ceylon		24/10/0 — 0/0/0
Palm, Lagos		21/15/0 — 0/0/0
Rapeseed, English pale		22/5/0 — 0/0/0
Do. Brown		20/15/0 — 0/0/0
Cottonseed ref.		15/0/0 — 16/0/0
Oleine		17/0/0 — 18/0/0
Lubricating U.S.		0/5/3 — 0/7/6
Do. Black		0/5/0 — 0/6/6
TAR—Stockholm	barrel	1/5/0 — 0/0/0
Archangel		0/18/0 — 0/0/0
Turpentine		31/0/0 — 31/2/6

TO CORRESPONDENTS.

W. H. & Son.—(Amounts should have been stated).

NOTE.—The responsibility of signed articles, and papers read at public meetings, rests, of course, with the authors.

We cannot undertake to return rejected communications.

Letters or communications (beyond mere news items) which have been duplicated for other journals are NOT DESIRED.

We are compelled to decline pointing out books and giving addresses.

Any commission to a contributor to write an article is given subject to the approval of the article, when written, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

All communications regarding literary and artistic matters should be addressed to THE EDITOR; those relating to advertisements and other exclusively business matters should be addressed to THE PUBLISHER, and *not* to the Editor.

TENDERS.

[Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursdays.* N.B.—We cannot publish Tenders unless authenticated by the name and address of the sender; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is given, nor any list in which the lowest Tender is under £100, unless in some exceptional cases and for special reasons.]

BASINGSTOKE.—For widening Victoria-street, for the Town Council. Mr. G. Fitton, Borough Surveyor, Town Hall, Basingstoke:—

John Ball	£1,093 15	J. Thumwood, Basingstoke*	£689
Musselwhite & Son	956 0		
S. Kavanagh	799 0		

* Accepted.

BECKENHAM.—For the execution of paving works, Trinity-street, &c., for the Urban District Council. Mr. J. A. Angell, Surveyor, Council Offices, Beckenham:—

T. Adams	£361 12 6	E. Iles	£284 17 0
G. Wilson	335 0 0	Mowlem & Co.	260 0 0

BECKENHAM.—For making up Border-crescent, for the Urban District Council. Mr. J. A. Angell, Surveyor, District Council Offices, Beckenham:—

T. Adams	£1,612 5 6	E. Iles	£1,271 8 0
G. Wilson	1,363 0 0	Mowlem & Co.	1,250 0 0

BRIDLINGTON.—For the erection of four houses, Horsforth-avenue, for Mr. Slater. Mr. J. Earnshaw, architect, Wellington-road, Bridlington Quay:—

E. Corner	£1,950	W. Barnes, Bridlington Quay*	£1,650
T. Blackburn	1,850		
Spink	1,665	S. Booth	1,522

* Accepted after alterations.

BRIDLINGTON QUAY.—For additions to No. 5, Burlington-terrace, for Mr. L. Noblet. Mr. J. Earnshaw, architect, Wellington-road, Bridlington Quay:—

T. Blackburn	£225 0	W. Barnes, Brid. Quay*	£155 0
E. Corner	185 10		

* Accepted.

BROADSTAIRS.—For the erection of a house, to be called St. Peter's Lodge, at Broadstairs, Kent. Mr. John Borrowman, architect:—

Norman & Burt	£2,036	R. A. Lowe	£1,855
F. T. Chinchen	£1,900	W. W. Martin	1,600

CANTERBURY.—For the erection of a new wing, hall, &c., and sanatorium at the Kent Wesleyan School, Canterbury, for the Kent Schools Association, Limited. Mr. Charles Bell, architect, 3, Salters' Hall-court, Cannon-street, London, E.C. Quantities supplied by Messrs. C. Stanger & Son, surveyors, 21, Finsbury-pavement, E.C.:—

G. Castle & Son	£8,781 17 6	F. T. Gentry	£6,690 0 0
T. T. Denne	7,592 0 0	General Builders, Ltd.	6,540 0 0
Jackson & Co.	7,559 0 0	Gann & Co.	6,450 0 0
G. Witshire	7,060 0 0	W. J. Adcock	6,319 4 10
Coulson & Lofts	7,037 0 0	T. L. Fearon	6,278 0 0
W. & H. Castle	7,015 0 0	Hayward & Paramor	6,274 0 0
J. Barker & Co., Ltd.	6,999 0 0	W. Judges, Boughton, Faversham*	5,973 0 0
E. Houghton & Son	6,756 0 0		
H. B. Milson	6 755 5 10		
T. H. Kingerlee & Son	6,704 0 0		

* Accepted.

CHURCH (Lancs).—For the supply of 550 tons granite setts, for the Urban District Council. Mr. W. E. Wood, C.E., Surveyor, District Council Offices, Church:—

W. Chandley & Co., Newry, Ireland*

* Accepted at a schedule of prices.

CRAWLEY (Sussex).—For extension of sewer at West Green, Crawley, for the Horsham Rural District Council. Mr. C. H. Burstow, Surveyor, 6, West-street, Horsham:—

H. Lindfield & Son	£145 10	R. Easton, Crawley*	£98 10
J. G. Pickard	139 16		

* Accepted.

CREWE.—For sewering, forming, &c., Lawton-street and others, for the Town Council. Mr. G. Eaton-Shore, Borough Surveyor, Earle-street, Crewe:—

Richmond-road—F. T. Bennie, Warrington	£996	9 1
Lawton-street, &c.—F. T. Bennie*	1,689	17 1
Lawton-street, &c.—F. Lunt, Crewe	1,821	14 6
Richmond-road.—Meicklewright & Sons, Crewe	1,090	13 9
Lawton-street, &c.— "	2,050	7 10
Richmond-road—B. Rowlands, Northwich	1,643	1 6
Lawton-street, &c.— "	2,706	4 2
Richmond-road.—C. H. Holmes, Crewe*	926	1 8

* Accepted.

DORCHESTER.—Accepted for building the new Victoria Hotel, Victoria Park, for Messrs. Eldridge, Pope, & Co., The Dorchester Brewery. Mr. A. L. T. Tilley, architect, 26, South-street, Dorchester:—

W. J. Hutchings, Dorchester £2,275

DOVER.—For completing Beconsfield-road, for the Town Council. Mr. H. E. Stilgoe, C.E., Town Hall, Dover. Quantities by the Borough Engineer:—

Austen & Lewis ..... £616 1 2 | H. Richardson £598 6 4

[Engineer's estimate, £547.]

Work to be carried out by the Corporation.

FARNHAM ROYAL.—For alterations and additions to "The Lodge," Farnham Royal, for Mr. W. Humphrey Ransford. Mr. Walter Emden, architect:—

H. Roffey	£2,080	John Deverill	£1,772
Beer & Gash	1,867	Cox & Sons*	1,730
Lancaster & Vaughan	1,856		

* Accepted.

FEATHERSTONE (Yorks).—For laying and jointing c.i. sewer-pipes, for the Urban District Council. Mr. W. A. Palliser, Engineer, Council Offices, Featherstone:—

W. Doleman	£429 13 6	R. W. Ibbotson	£364 0 9
John Keightley	383 4 3	John Bentley, 68, Hampton-road, Southport*	364 0 0
Thos. Rowlands	376 9 9		

Engineer's estimate, £365 2s. 7d.

Tenders with cost of pipes £195 added.

* Accepted.

HAMPTON-ON-THAMES.—For additions to station schools, Hampton-on-Thames. Mr. F. G. Hughes, architect:—

A. G. Pimbell	£729 0 0	W. Bishop	£465 0 0
A. Gimson	639 16 0	J. C. Snell	455 15 0
J. Pavey	599 0 0	J. Hebblethwaite, of Pimlico & Twickenham*	425 0 0
L. Wake	550 9 6		
J. Write	550 0 0		
J. Singleton & Sons	486 0 0		

* Accepted.

HEYSHAM (Lancs).—For the erection of an arcade, Heysham. Mr. A. L. Lang, architect, Pedder-street, Morecambe:—

Through Tender.

John Edmondson £919

Excavating, Masonry, and Brickwork.

Edward Turner	£589 0 0	Parkinson & Siddle, Morecambe*	£448 0
D. Hinchcliffe & Co.	519 9 6		
J. H. Dodgson	514 0 0		

Plumbing and Glazing.

J. P. McNair	£176 0 0	R. B. Abbott	£159 0 0
W. B. Hodgson	170 0 0	J. H. Cross, Heysham*	136 12 9½
Wm. Watson	161 0 8½		

Carpentry and Joinery.

Schofield Bros.	£230 0	Roberts & Ogden	£160 0
J. Greenwood	189 10	Hainsworth & Bland, Morecambe*	157 10
R. D. Parkinson	178 0		

Slating and Plastering.

W. J. Cross	£91 18
Hill & Nelson, Morecambe and Bradford*	73 19

Plastering.

B. Sugden & Son, Manningham (Yorks)	£61

* Accepted.

HORSHAM.—For additions to workhouse, for the Union Guardians. Mr. C. H. Burstow, architect, 6, West-street, Horsham. Quantities by architect:—

J. Ockenden & Son	£7,685	Rowland Bros.	£6,999
R. Cook & Sons	7,628	Potter Bros., Horsham*	6,730

* Accepted.

LEAMINGTON.—Accepted for the erection of a lodge, Victoria Park, for the Town Council. Mr. F. G. Cundall, architect, 41, Parade, Leamington:—

Mr. T. Prath, Leamington £510

LEEDS.—Accepted for the erection of ten houses, Tunstall-road. Mr. Fred. Mitchell, architect, 71, Albion-street, Leeds:—

Brick and Stone.—W. H. Jones & Co., 10, Leighton-lane
Joinery.—G. H. Nettleton, Tenter-lane
Plumbing.—John Watson, Butts-court
Plastering.—W. H. Branton, Lovell-road
Slating.—J. Atkinson & Son, Whitehall-road
Painting.—A. Hoyle, Burley Village
[All of Leeds.]
} £2,007 5 7

LONDON.—For proposed addition to premises, Bond-street, Vauxhall, for Barrett's Brewery and Bottling Company, Limited. Mr. J. A. J. Woodward, architect:—

Holloway Bros.	£765	T. Hooper & Son	£650
H. Hall	737		

LONDON.—For the erection of granary, offices, stables, and store, at Wheatsheaf Wharf, Holyport, near Fulham, for Hard & Mones Stores, Limited. Mr. J. A. J. Woodward, architect:—

Holloway Bros.	£8,400	Parker	£7,508
J. Parsons	7,669	T. Hooper & Son	7,327
Wimpey	7,600	J. Marsland	7,225

LONDON.—For an extension of the British Home for Incurables at Crown-lane, Streatham, S.W. Mr. Edwin T. Hall, architect, 57, Moorgate-street, E.C.:—

Foster & Dicksee	£8,270	Bulled & Co.	£7,594
Woodward & Co.	7,983	Johnson & Co.	7,585
Cubitt & Co.	7,917	Higgs & Hill	7,584
Lawrence & Son	7,800	Marriage & Co. (accepted)	6,950
Lovatt	7,782		

LONDON.—For alterations and decorations of No. 42, Kensington Park-gardens, Bayswater, W. Mr. J. S. Brown, surveyor, 15, Finsbury-circus, E.C.:—

	Generally.	Bay Window.
R. S. Buckeridge	£373	£31
Spier & Son	369	30
Nigrett	275	28
Cannon	255	25

NEW BARNET.—For the erection of school buildings, Victoria-road, for the East Barnet School Board. Mr. W. Pywell, architect, 40, Great James-street, Bedford-row, W.C.:—

Willmott & Sons	£12,232	General Builders, Ltd.	£10,000
Goddard & Sons	10,763	Merredew & Wort	9,965
A. Porter	10,559	Coulson & Lofts, Cambridge*	9,597
F. Britton	10,500		
W. M. Butcher	10,464		

* Provisionally accepted.

SEATON (Devon).—For erection of new bank and premises, for the Wilts and Dorset Banking Company. Mr. G. M. Selley, architect, 17, Craven-street, Strand, London:—

Stephens, Bastow & Co	£2,998 0	A. Richards	£2,340 16
J. W. & H. Childs	2,595 0	A. Poole	2,298 0
Chas. Turner	2,366 3	Lye & Sons	1,882 15

STANMORE.—For the erection of a dwelling house, at Stanmore, for the Canons Park Estate Company, Limited. Mr. John Waterson, architect, No. 4, College-chambers, 249½, High Holborn:—

T. C. Bowden	£2,100	T. Turner, Ltd.	£1,760
Hayworth & Sons	1,878	H. Wall & Co.	1,751
F. Dupont	1,840	T. Britten	1,699
Yerbury & Sons	1,819	T. W. Dixon	1,685
R. L. Tonge	1,790	W. & H. Jones	1,650
W. Smith	1,787	General Builders, Ltd.	1,620
C. Eames	1,786	W. Pearce	1,572

STANMORE. — For the erection of a dwelling-house, at Stanmore, for the Canons Park Estate Company, Limited. Mr. John Waterson, architect, No. 4, College Chambers, 249½, High Holborn:—

T. Bowden	£1,983	T. Turner, Ltd,	£1,854
Hayworth & Sons	1,977	Yerbury & Sons	1,843
R. L. Tonge	1,950	F. Britten	1,790
F. Dupont	1,950	H. Wall & Co.,	1,788
T. W. Dixon	1,898	W. & H. Jones	1,780
W. Smith	1,805	General Builders, Ltd.	1,730
C. Eames	1,889	W. Pearce	1,695

TAUNTON.—For the construction of a sewer, Target Field, for the Town Council. Mr. J. H. Smith, C.E., Municipal Offices, Corporation-street, Taunton:—

Allen & Son	£9,362 9 0	R. Hitchcock	£7,882 19
R. H. B. Neal	8,470 0 0	G. Bell	7,805 0
W. Gibson	8,441 16 7	W. L. Meredith	7,700 0
Facey	8,360 0 0	B. Cook & Co., Victoria-street*	7,518 0
H. W. Pollard	7,998 0 0		

* Accepted.

WELLINGTON (Somerset).—For erecting a chapel, &c., Wellington, Somerset. Mr. F. W. Roberts, architect, 2, Hammet-street, Taunton:—

	Chapel. £ s.	School. £ s.	Total. £ s.
A. J. Spiller	1,780 0	516 0	2,296 0
H. J. Spiller	1,707 0	482 0	2,189 0
F. W. Rowsell	1,694 10	487 10	2,182 0
J. Morse	1,658 0	470 0	2,128 8
T. Manning	1,630 0	454 0	2,084 0
H. W. Pollard	1,600 0	440 0	2,040 0
T. W. Sweet	1,597 0	430 0	2,027 0
W. Follett, Wellington*	1,586 0	422 0	2,008 0

* Accepted.

WOLVERHAMPTON.—For additions to the "Prince Albert Inn," Railway-street. Mr. George Wormal, architect, Stafford:—

John Gethin	£3,177	Thomas Skett, Castle-st., Wolverhampton*	£2,778
R. Speake & Sons	2,992		
John Stringer	2,940	F. Lindsay Jones	2,695
James Herbert	2,790		

* Accepted.

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom, at the rate of 19s. per annum (52 numbers) PREPAID. To all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, &c., 26s. per annum. Remittances (payable to DOUGLAS FOURDRINIER) should be addressed to the publisher of "THE BUILDER," No. 46, Catherine-street, W.C.

SUBSCRIBERS in LONDON and the SUBURBS, by prepaying at the Publishing Office, 19s. per annum (52 numbers) or 4s. 9d. per quarter (13 numbers), can ensure receiving "The Builder," by *Friday Morning's Post.*

THE BATH STONE FIRMS, Ltd.
BATH.
FOR ALL THE PROVED KINDS OF
BATH STONE.
FLUATE, for Hardening, Waterproofing, and Preserving Building Materials.

HAM HILL STONE.
DOULTING STONE.
The Ham Hill and Doulting Stone Co.
(incorporating The Ham Hill Stone Co. and C. Trask & Son, The Doulting Stone Co.)
Chief Office:—Norton, Stoke-under-Ham, Somerset.
London Agent:—Mr. E. A. Williams, 16, Craven-street, Strand.

Asphalte.—The Seyssel and Metallic Lava Asphalte Company (Mr. H. Glenn), Office, 42, Poultry, E.C.—The best and cheapest materials for damp courses, railway arches, warehouse floors, flat roofs, stables, cow-sheds and milk-rooms, granaries, tun-rooms, and terraces. Asphalte Contractors to the Forth Bridge Co. [ADVT.

SPRAGUE & CO., Ltd.,
LITHOGRAPHERS,
Employ a large and efficient Staff especially for Bills of Quantities, &c.
4 & 5, East Harding-st., Fetter-lane, E.C. [ADVT.

QUANTITIES, &c., LITHOGRAPHED accurately and with despatch.
METCHIM & SON { 8, PRINCES STREET, GT. GEORGE ST. WESTMINSTER
"QUANTITY SURVEYORS' DIARY AND TABLES," For 1899, price 6d. post 7d. In leather 1/- Post 1/1 [ADVT.

C. B. N. SNEWIN
MAHOGANY, WAINSCOT, WALNUT, TEAK, VENEER, and TIMBER MERCHANT,
Nos. 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, & 17, BACK HILL, HATTON GARDEN, and 29, RAY STREET, FARRINGDON ROAD, E.C.
THE LARGEST STOCK OF ALL KINDS OF WOODS IN EVERY THICKNESS, DRY, AND FIT FOR IMMEDIATE USE.
Telephone, No. 274 Holborn. Tele. Address "SNEWIN: London."

J. J. ETRIDGE, Jr.
SLATE MERCHANT,
SLATER and TILER.
ESTIMATES GIVEN FOR
SLATING AND TILING,
To be executed by Contract in any part of ENGLAND.
Penrhyn - Bangor,
Oakeley - Portmadoc,
And other description of Slates Ready for immediate delivery to any Railway Station.
Applications for Prices, &c., to
BETHNAL GREEN SLATE WORKS,
BETHNAL GREEN, LONDON, E.

ASPHALTE
For Horizontal & Vertical Damp Courses.
For Flat Roofs, Basements, & other Floors.
Special attention is given to the above by
THE
French Asphalte Co.
Contractors to
H.M. Office of Works, The School Board for London, &c.
For estimates, quotations, and all information, apply at the Offices of the Company,
5, LAURENCE POUNTNEY HILL,
CANNON STREET, E.C.

TWELVE GOLD AND SILVER MEDALS AWARDED.
IRON CISTERNS.
F. BRABY & CO.
VERY PROMPT SUPPLY.
LARGE STOCK READY.
Particulars on application. **CYLINDERS FOR HOT-WATER CIRCULATION.**
LONDON: 352 to 364, EUSTON-ROAD, N.W., and 218 and 220, HIGH-STREET, BOROUGH, S.E.
LIVERPOOL: 6 and 8, HATTON GARDEN.
GLASGOW: 47 and 49, ST. ENOCH-SQUARE.
BRISTOL: ASHTON GATE WORKS, CORONATION-RD.

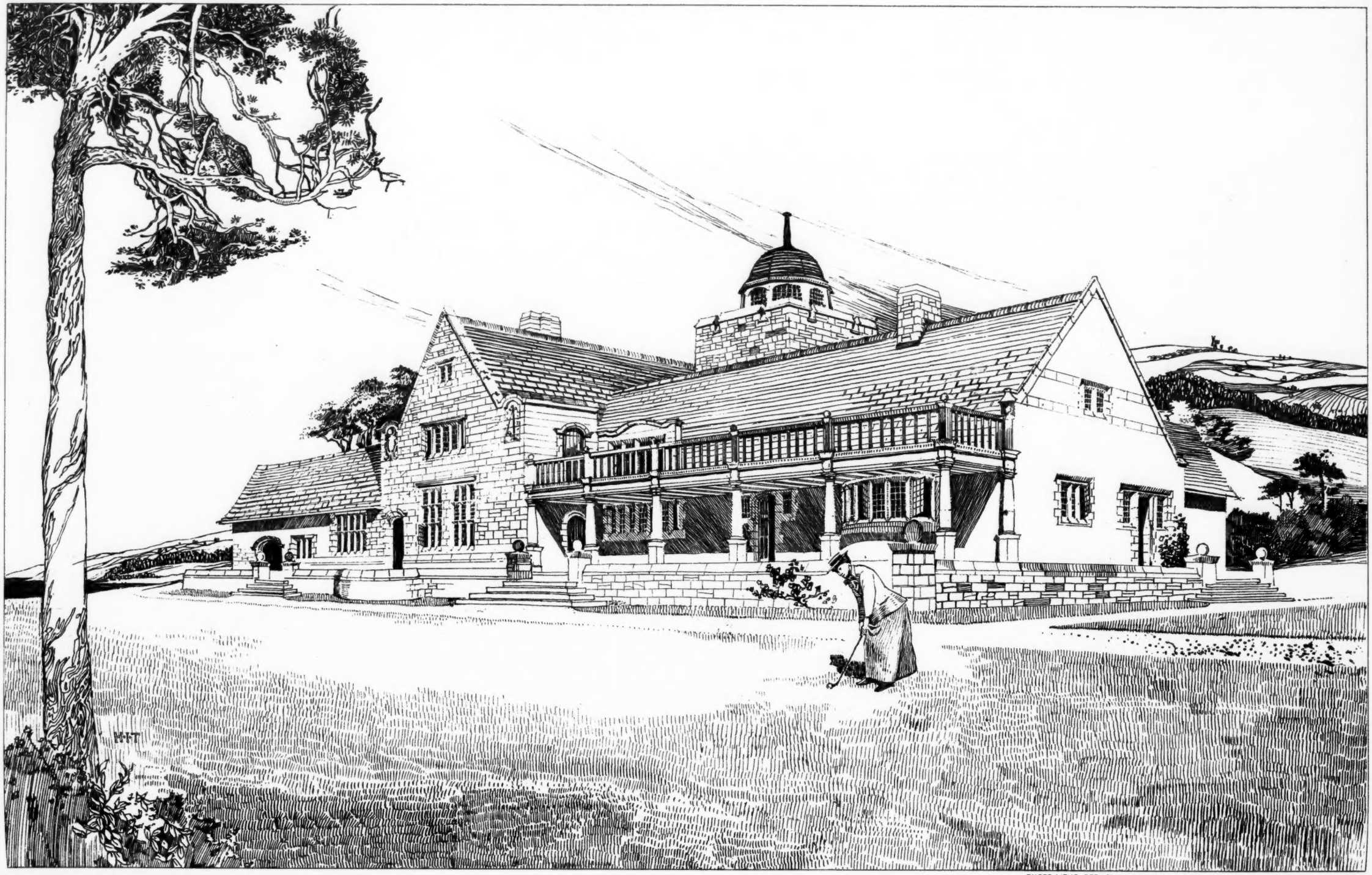


PHOTO-LITHO. SPRAGUE & Co. LTD 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.

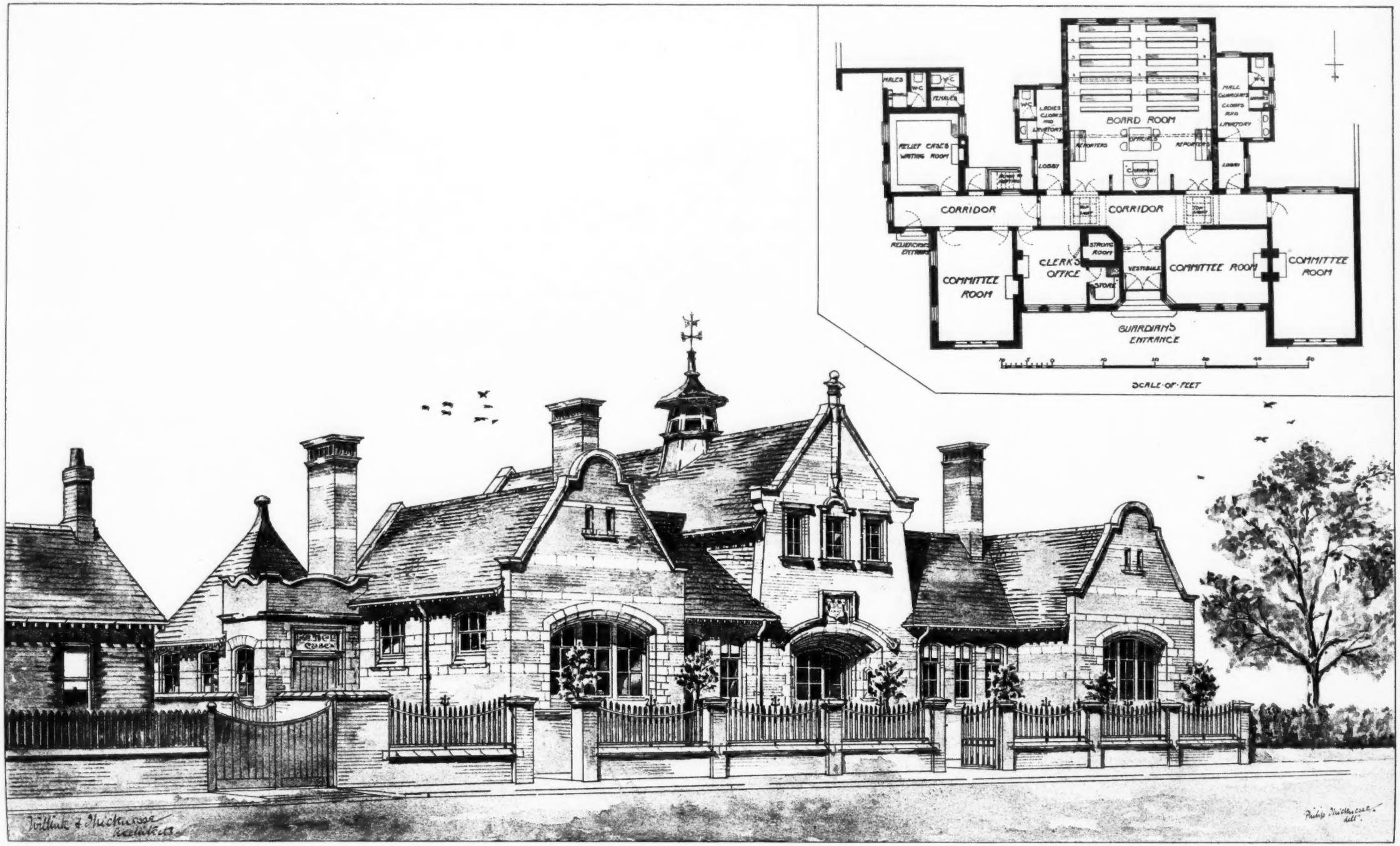
Architectural Association Silver Medal, 1897.

DESIGN FOR A GOLF CLUB-HOUSE.—By Mr. H. Inigo Triggs.

PHOTO-LITHO. SPRAGUE & Cº LTD 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.

Architectural Association Silver Medal, 1897.

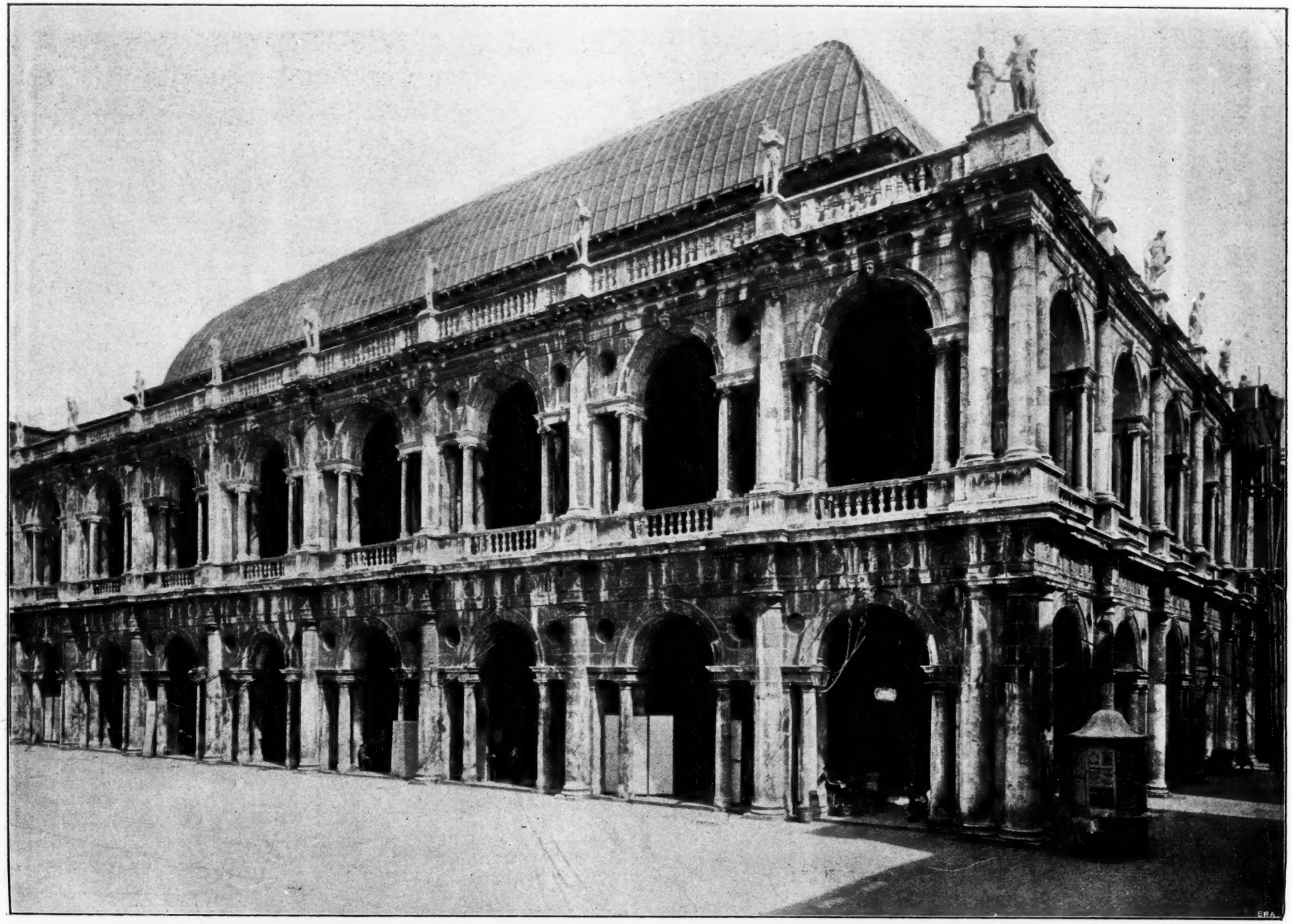
DESIGN FOR A GOLF CLUB-HOUSE.—By Mr. H. Inigo Triggs.



INK-PHOTO SPRAGUE & C° LTD 4 & 5 EAST HARDING STREET FETTER LANE E.C.

VESTRY OFFICES, ORMSKIRK.—Messrs. Willink & Thicknesse, Architects.

VESTRY OFFICES, ORMSKIRK.—Messrs. Willink & Thicknesse, Architects.

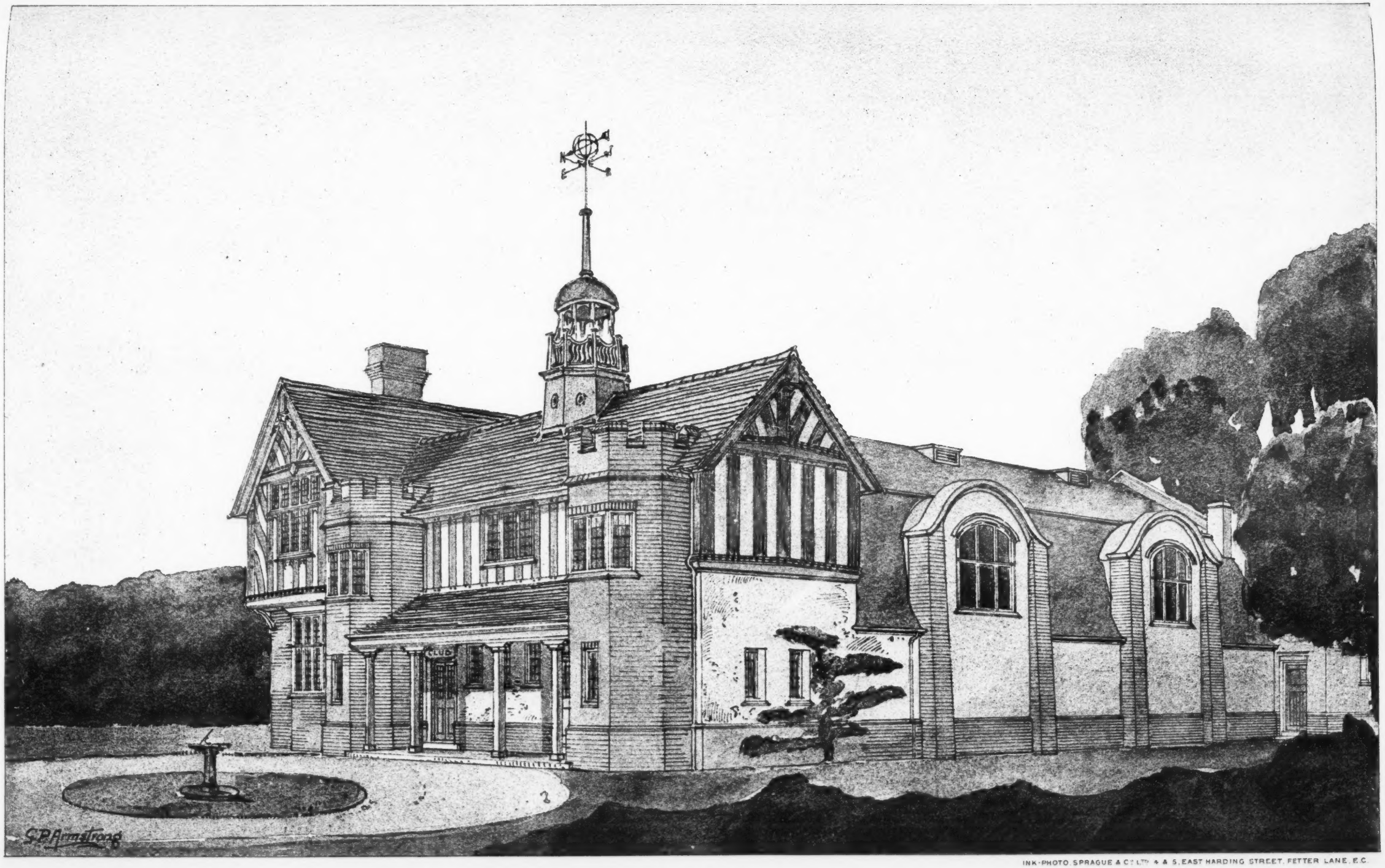


PALAZZO DELLA RAGIONE, VICENZA (Palladio).

GENERAL LIBRARY,
UNIV. OF MICH.
FEB 8 1899

PORTICO, SANTA MARIA DEI MIRACOLI, BRESCIA.

GENERAL LIBRARY,
UNIV. OF MICH.
FEB 8 1899



INK-PHOTO. SPRAGUE & Co LTD 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.

VILLAGE HALL AND CLUB, BYFLEET.—Messrs. Ashley & Armstrong, Architects.

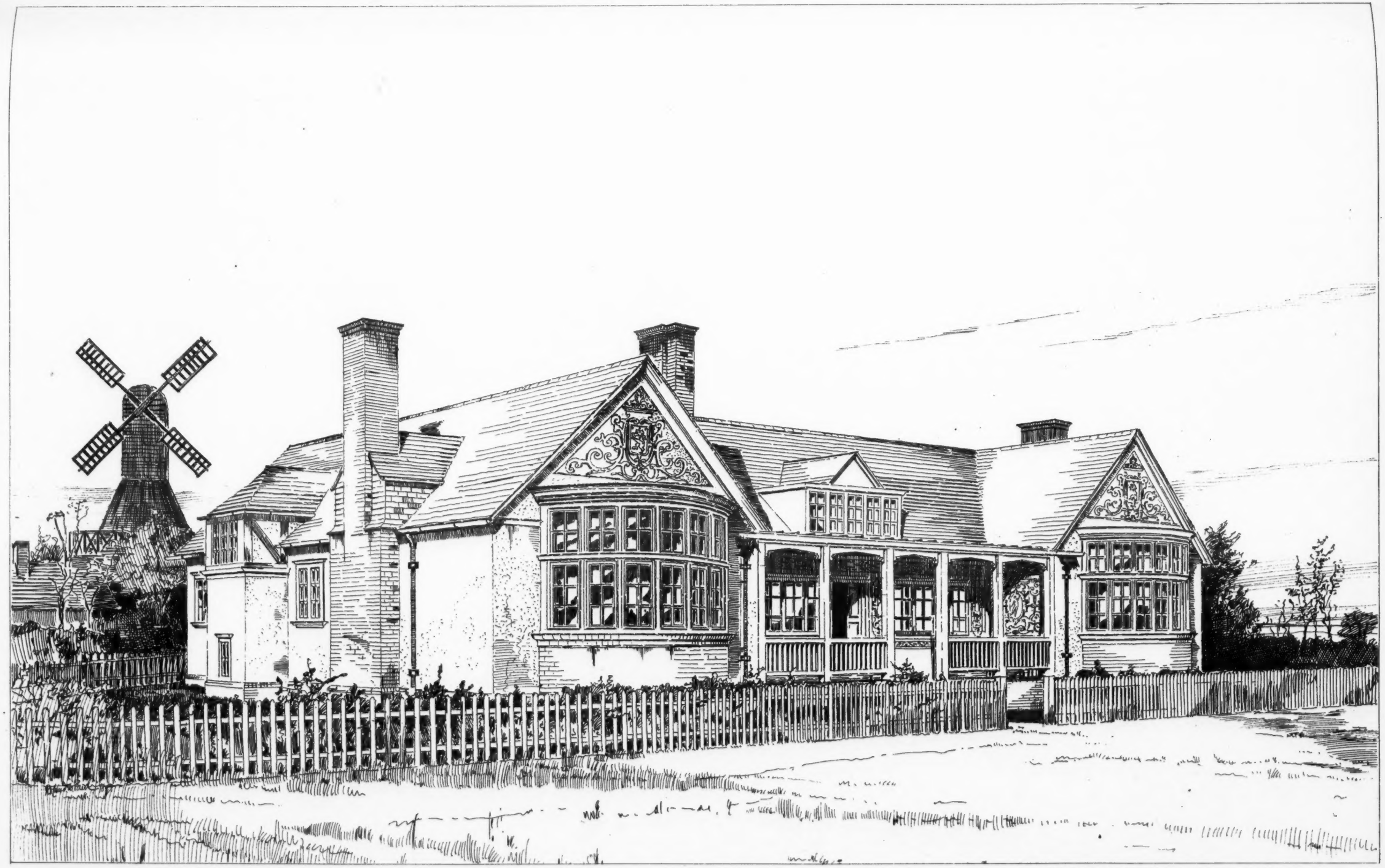
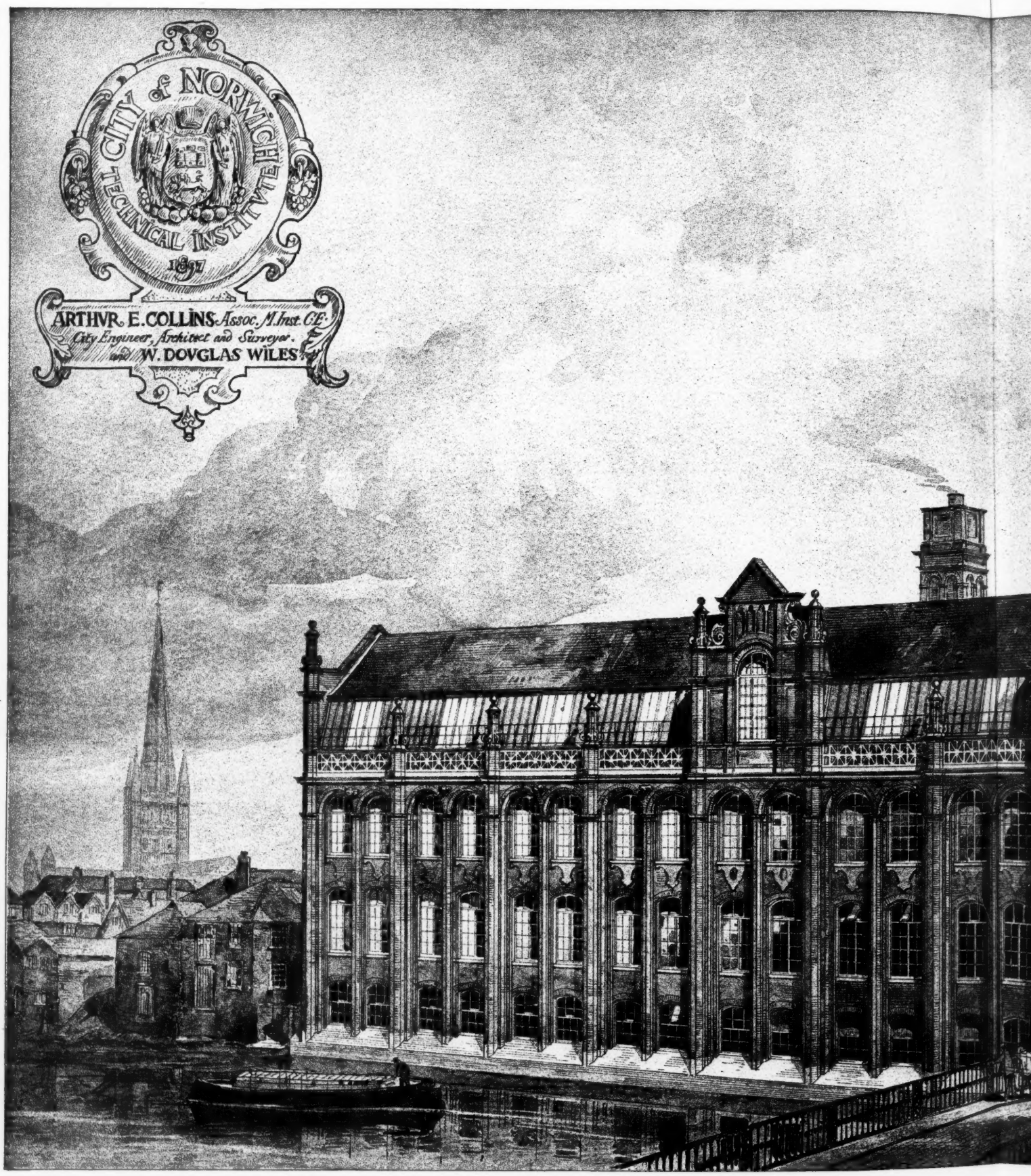
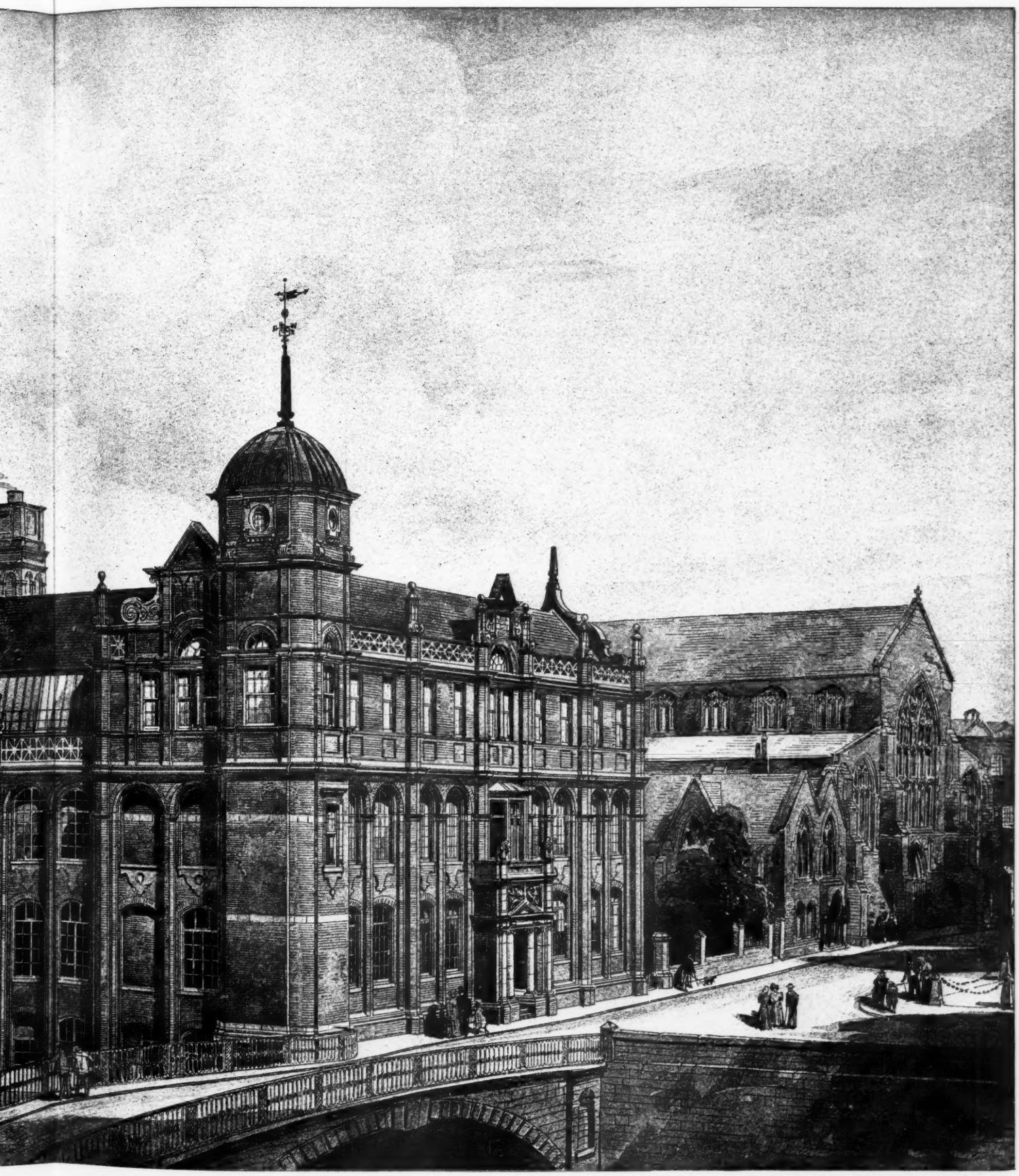


PHOTO-LITHO. SPRAGUE & Co LTD 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.

NEW CLUB-HOUSE FOR THE LONDON SCOTTISH GOLF CLUB, WIMBLEDON COMMON.—Mr. H. O. Cresswell, F.R.I.B.A., Architect


CITY of NORWICH
TECHNICAL INSTITUTE
1897
ARTHUR E. COLLINS Assoc. M. Inst. C.E.
City Engineer, Architect and Surveyor.
and W. DOUGLAS WILES



INK-PHOTO. SPRAGUE & Co LTD 4 & 5. EAST HARDING STREET. FETTER LANE. E.C.